The Ionick Capital.

THIS Plate contains three Figures; N°. 1. the upright face of the Capital, N°. 2. the Plan of the round and ſquare Column with the projection of the Capital, and N°. 3. the Volute ſeen in front and angular-wiſe, drawn larger than above. Between N°. 1. and N°. 2. there is a Scale of one Diameter, half of which is divided into ſix parts; to which there are added three parts on each ſide, for the projection of the Capital. Draw a line for the middle of the Capital, and another croſs-wiſe for the upper part of it; give half a Diameter for its height *AB*. Divide it into three parts, as marked on the left hand above; take $\frac{1}{3}$ for the *Abacus*, which you are to divide into two parts, and the upper half into four, of which you muſt give three to the *Ovolo*, and one to the Liſt of the *Abacus*. Then divide the height *BC* into eight parts, two of them give the *Ovolo* H, one the Bead *I*, which anſwers to the Eye of the Volute, and half one of thoſe parts gives the Liſt *K*. This being done, form the Volute from its ſeveral Centers, as in the example N°. 3. And as the height of the Volute is divided into eight parts, the breadth of it muſt be ſeven of them: But to make it more plain, I have drawn it larger on the next Plate.

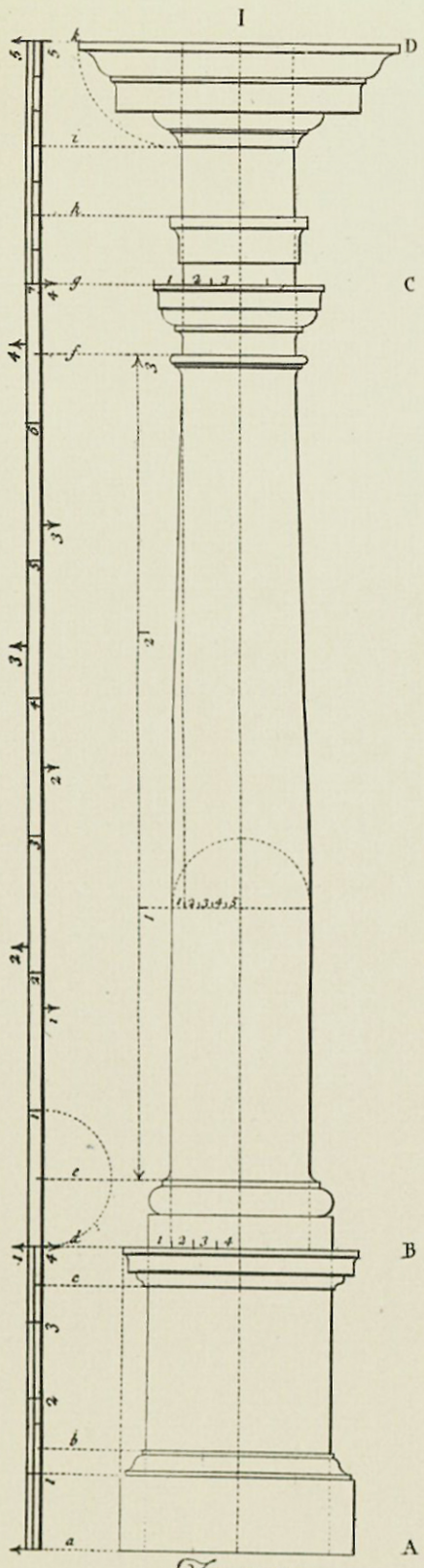
To draw the Plan N°. 2. take five parts of the Diameter for the ſolid or diminiſhed part of the Column, which is ſhaded on the Plan. From the Profile of the upright face of the Capital draw the projection of the *Ovolo*, Bead and Liſt, and mark them in the Plan. The Flutings are 24; to form which, divide a quarter of the Plan of the Column into ſix parts, which ſhall give the Center for each Flute. Then divide half a ſixth into four parts; take three parts for half the Diameter of the Flutes, and draw them Semicircular, the ſpaces betwixt the Flutes will be $\frac{1}{3}$ of a Flute; the Eggs and Darts are of the ſame number, and anſwer the ſame diviſions. The Flutes of Pilaſters or ſquare Columns muſt be the ſame as in round Columns, which will make ſeven in number, divided from the middle; at the corner of each Pilaſter there remains $\frac{1}{3}$ for a Bead. Then form a ſquare at the extremity of the projection of the Capital, take off at each corner diagonally $\frac{1}{3}$ of half the Diameter of the Column, from the corner of the remaining length mark the interſection at *D*, from this Center draw the Segment or Cavity of the *Abacus* EE, ſet off corner-wiſe $\frac{1}{3}$ for the two members of the *Abacus* FF, divide it into two parts and give one to the narroweſt part of the *Abacus* GG, join the inner and outer corner by a line, and return the members of the Cavity. The greateſt projection of the Volute *L* falls plumb with the lower part of the *Abacus* G, as is ſhewn in N°. 3.

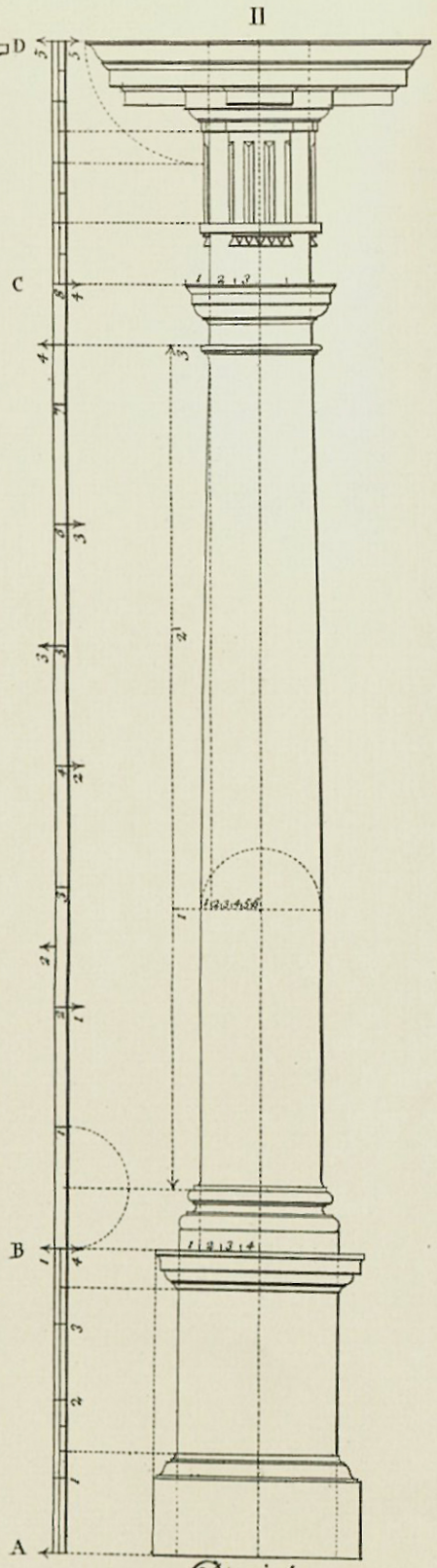
A Rule for drawing the Spiral Lines of the Volute of the Ionick Capital.

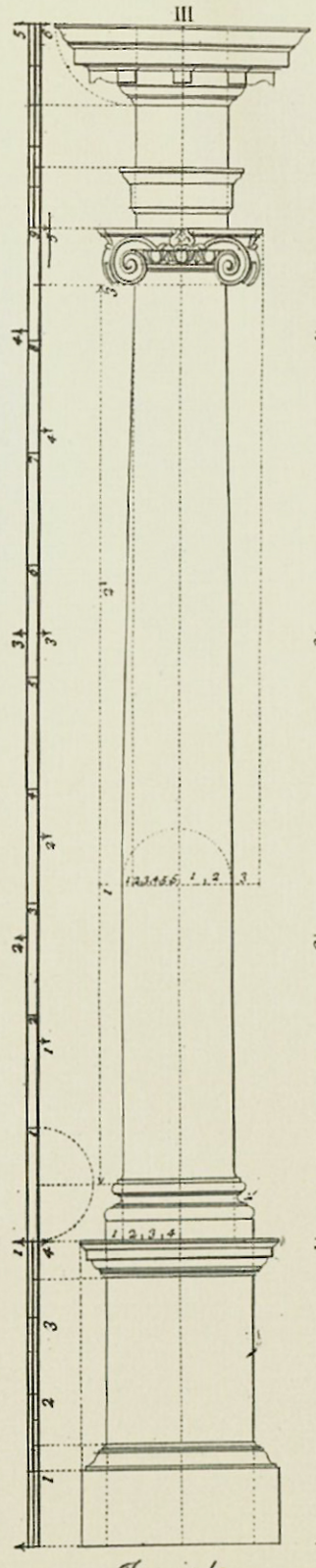
THE Rule to draw the Spiral lines, which form the *Ionick* Volute, is this: Take the height *AB*, and divide it into eight parts, the fourth ſhall be the bigneſs of the Eye, which divide into two parts for the Center; then draw *AC* in a rectangle to *AB*, and mark on it ſeven of the diviſions of the upright line *AB*, which gives the breadth of the Volute; the upright line on the third diviſion gives the Center of the Eye: Then draw the outer ſquare that contains the Eye, and the Diagonal lines through the Center of it; parallel to thoſe Diagonals, deſcribe the inner ſquare, in which obſerve the croſs lines from ſide to ſide divided into ſix parts for the Centers, as is expreſſed larger in the lower Figure, where the Centers are marked 1, 2, 3. From theſe Centers draw lines parallel to the ſides of the outer ſquare, extended on each ſide; fix one point of your Compaſſes in the firſt Center 1, and extend the other upwards to 1, and draw the biggeſt Quadrant from 1 to 2; change your Compaſſes to the Center 2, and with the length 2, 2, deſcribe the next Quadrant from 2 to 3; and ſo on to the number of Centers, until the Spiral line touch the upper part of the Eye. The inner Spiral runs parallel to the outer from *aa* to Center 3, and the breadth of the Fillet formed by them is half one of the diviſions of the upright Scale. The ſecond Spiral is marked with letters *a b c d*, &c. as alſo the Centers belonging to it; all which will be plain if followed in the ſame manner as before.

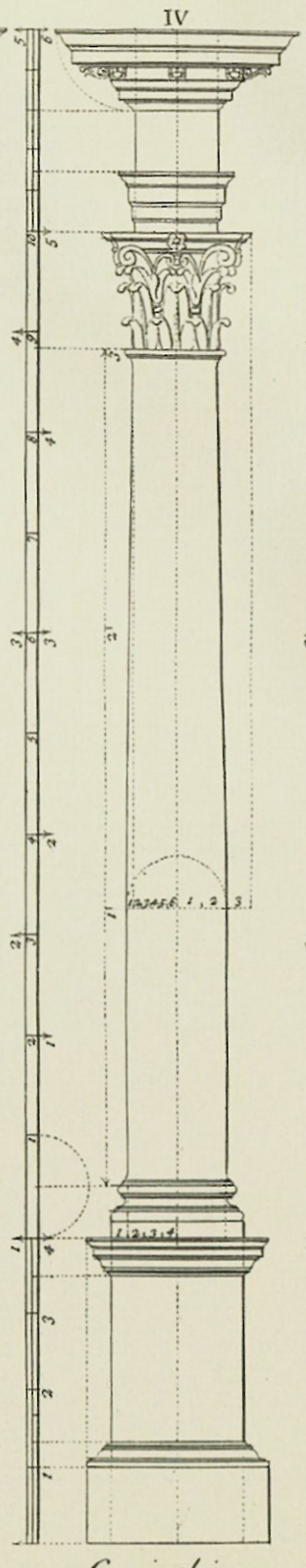
James Gibbs. London, 1737.

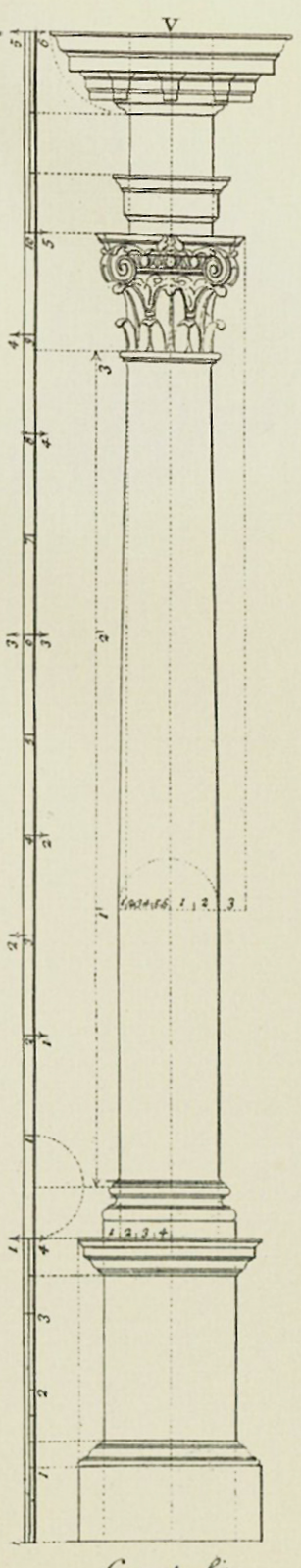
ANDREW B GRAHAM PHOTO LITHO WASHINGTON D C


I
Tuscan

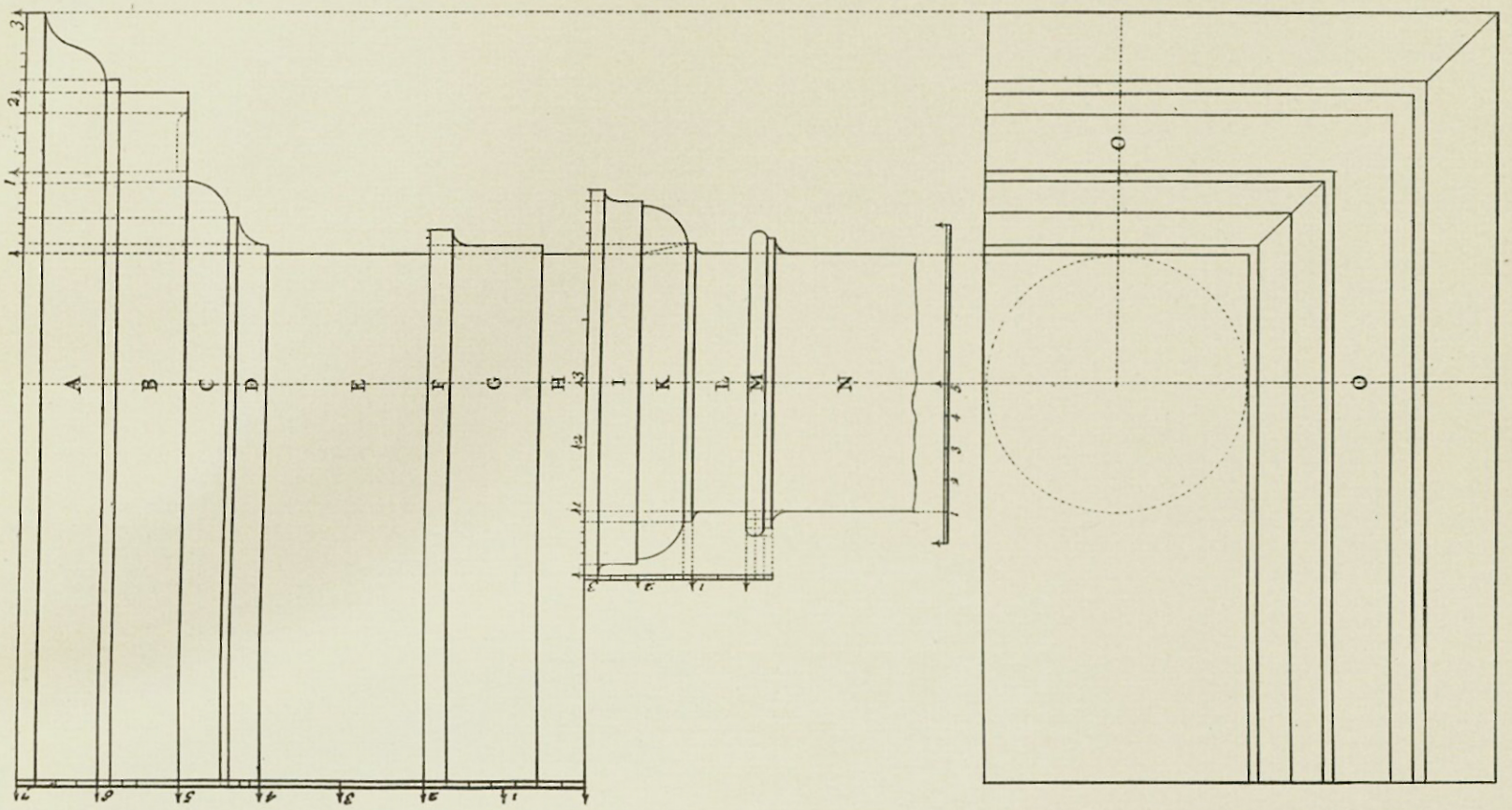

II
D
C
B
A
Dorick

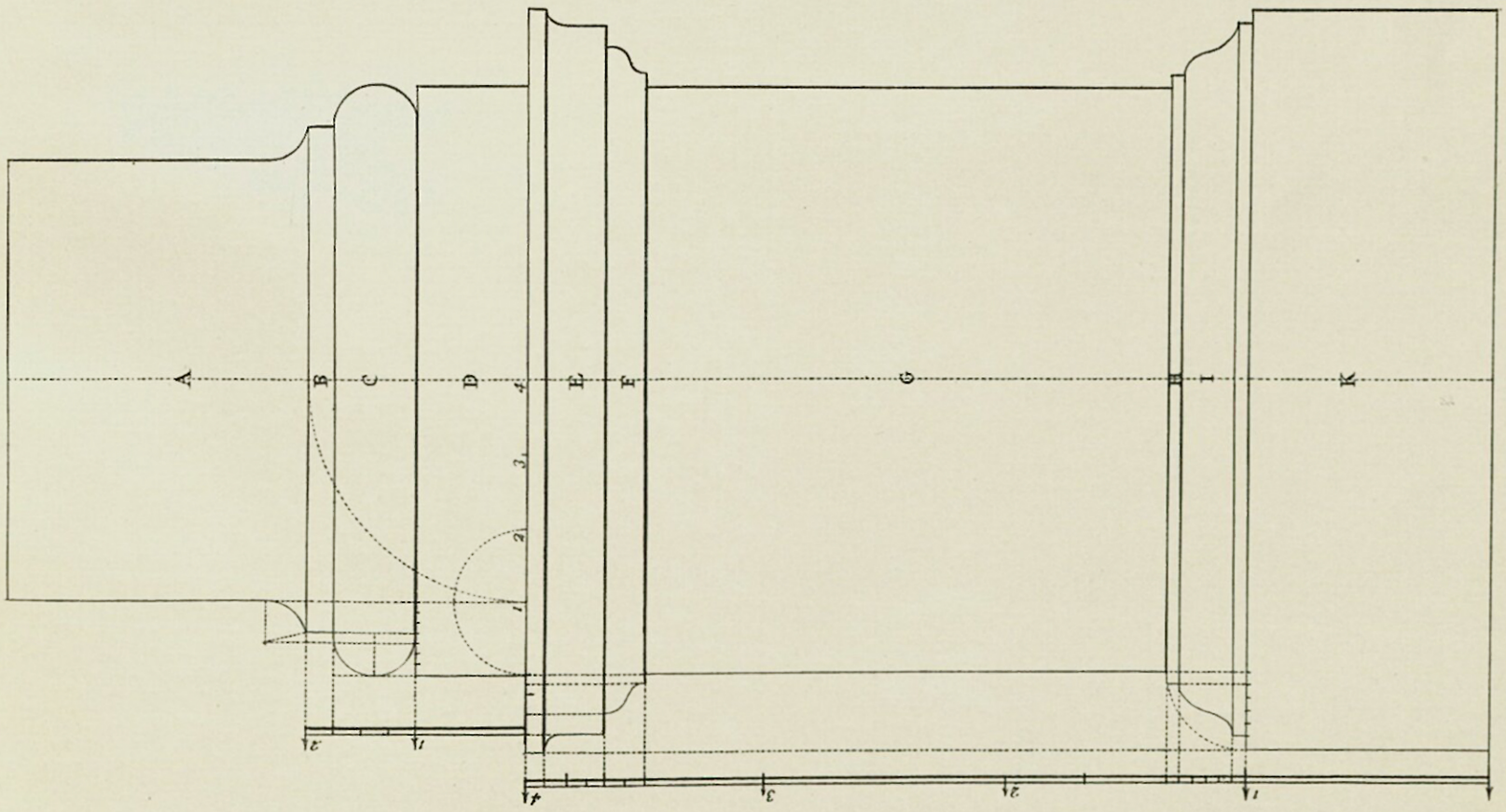

III
Ionick


IV
Corinthian

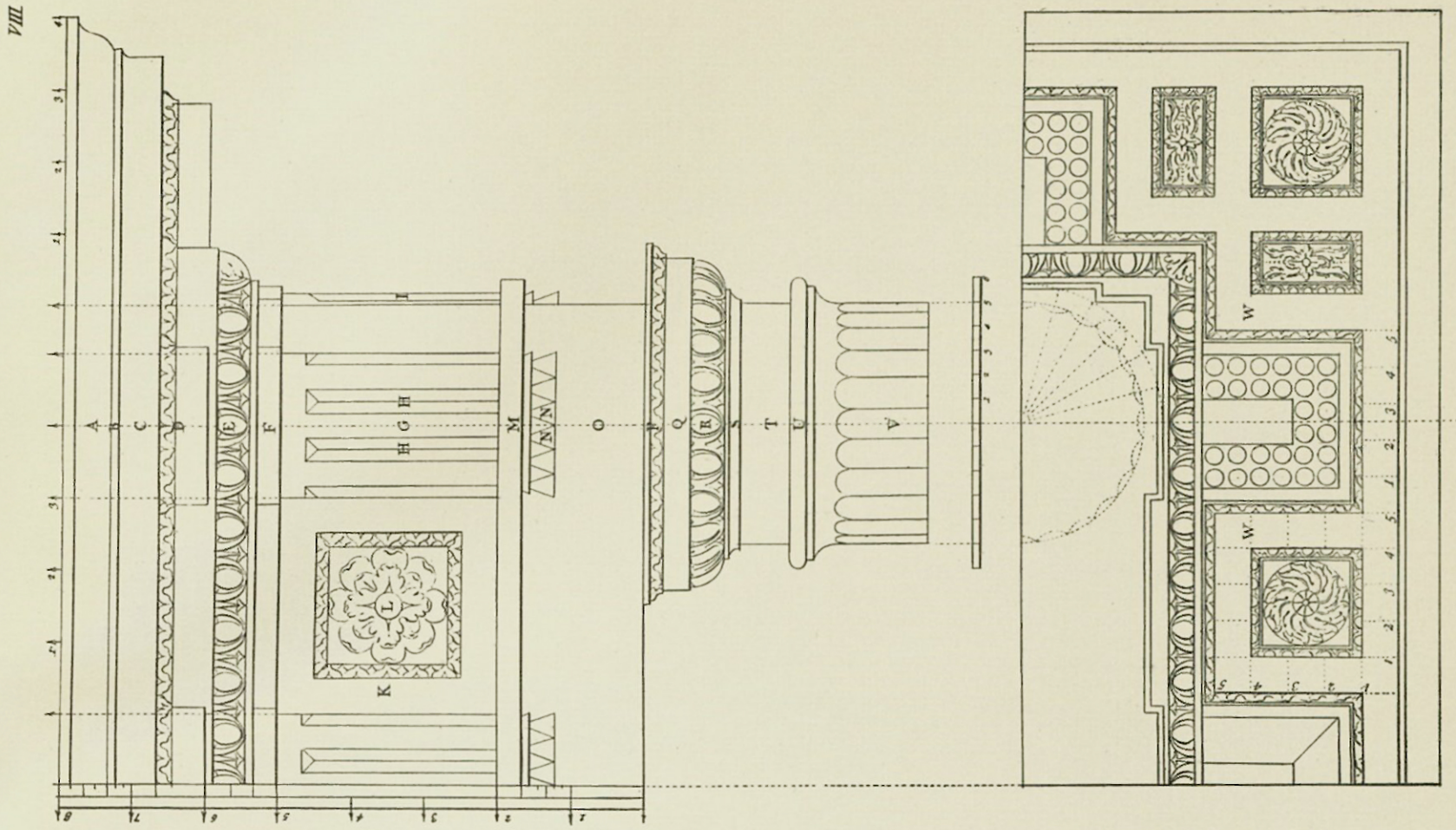

V
Compoſite

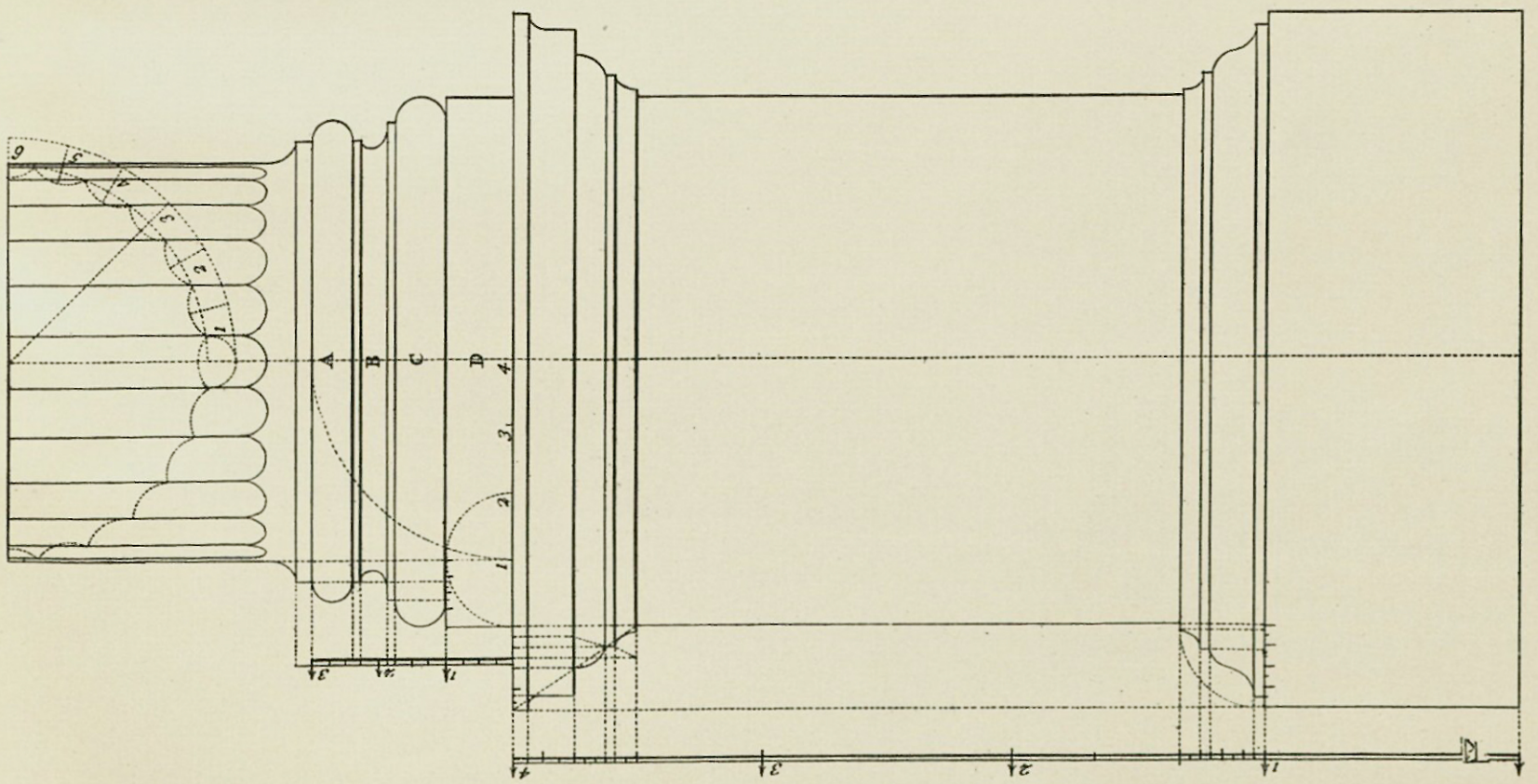
IV



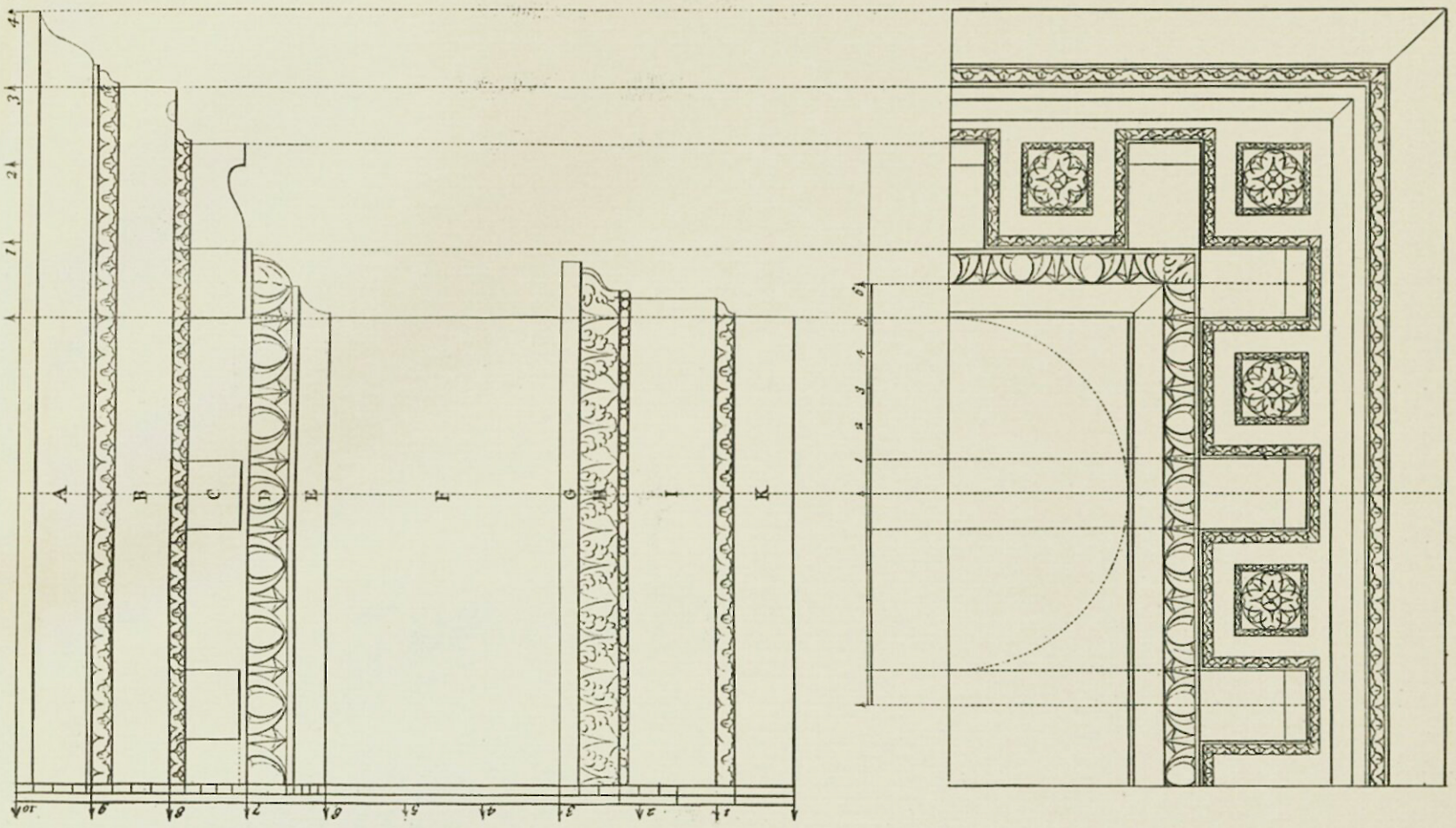


VIII

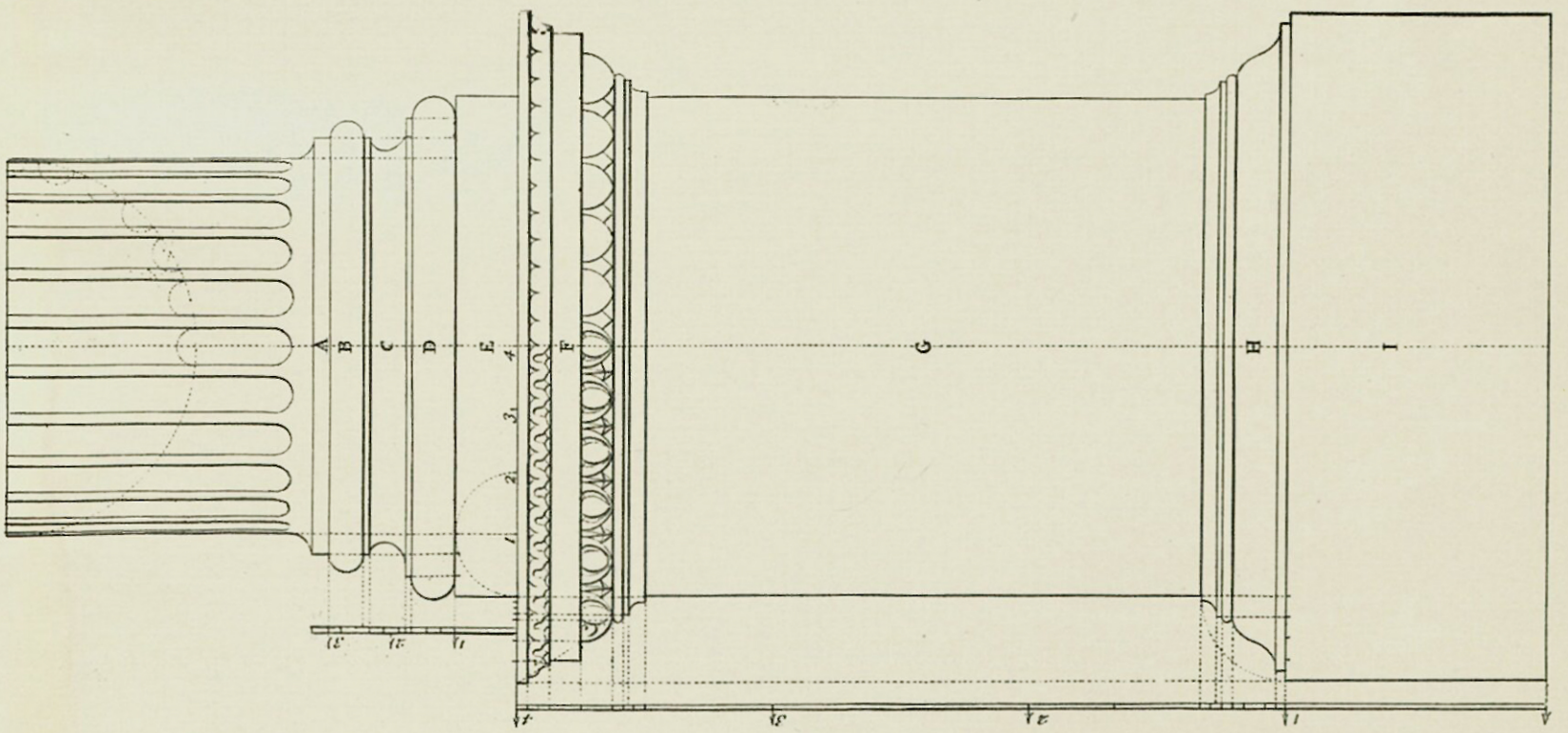




XI



X

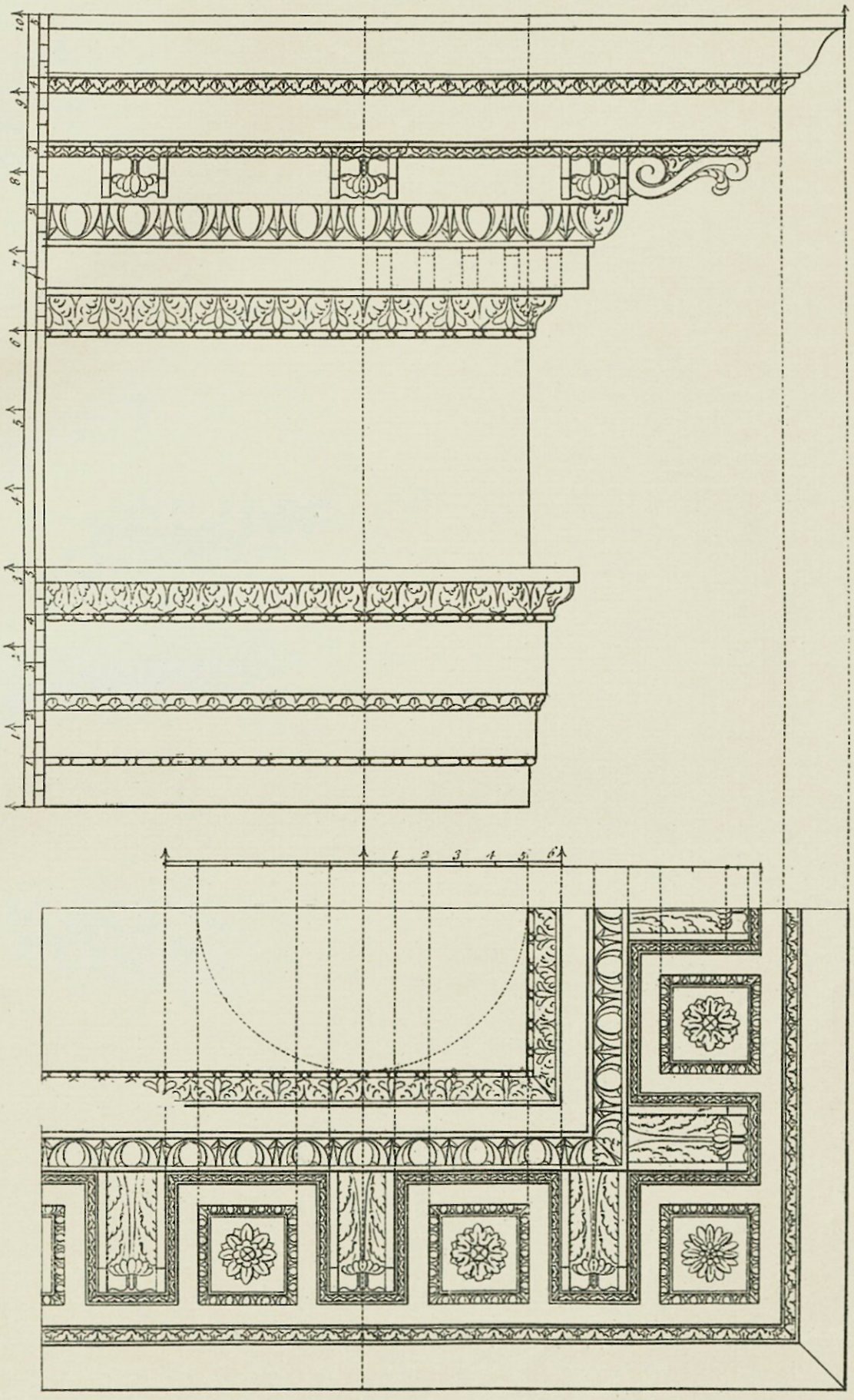


THE CORINTHIAN ENTABLATURE AND CORNICE.

PLATE 123.

THE height of the Corinthian Entablature is divided into ten parts; whereof the architrave hath three, the frieze three, and the cornice four. The projection of the cornice, being equal to its height, is divided into four parts; the smaller divisions are expressed at large on the next plate. The drawings below show the platform of the cornice with its modillions and roses.

The Corinthian cornice is of a more rich composition, and hath a greater variety of members than the former. The first upright scale contains four parts of the ten into which the whole entablature is divided, as on Plate 123. The second scale is divided into five parts, the third of which goes to the modillion, the fourth to the corona, the fifth to the cimafium; the first and second together are divided into three parts, the first is for the reversed cima at the bottom, the second for the dentels, and the third for the ovolo. The smaller members are in proportion to the greater, as is explained by the lesser divisions on that scale. The modillions are $\frac{1}{6}$ of the diameter of the column, and their distances two-fifths and a half. Half a diameter is here divided on the cornice into six parts, of which the breadth of the modillion is two, and the length of it is four; the cap projects $\frac{1}{8}$ of those parts, and the distance betwixt the modillions is five. By this rule the exact distance betwixt middle and middle of the modillion is $\frac{7}{12}$ of the diameter. The upright pricked line *A B* is the middle of the column, and *C D* answers to the diminished part of it, from whence the cornice is projected; which projection is equal to its height, as is shown by the scale at the bottom of the cornice; on which is likewise shown the bigness of a modillion, where one-fourth of the scale is divided into six parts, five of which make the breadth of the modillion. The distance between them is in proportion to it, as figured in the front and profile of it. The panels in the sofite are plain by the divisions marked on them. The out-fillets of the modillion marked *a*, *a*, are $\frac{1}{8}$ of its breadth; and so is the bead *f*. But I have drawn the modillion at large and explained it at the end of this book. As to the dentels, divide the semidiameter marked on the cornice into fourteen parts; two of those parts will be the dentel, and one the space betwixt them.



FROM GIBBS "RULES"

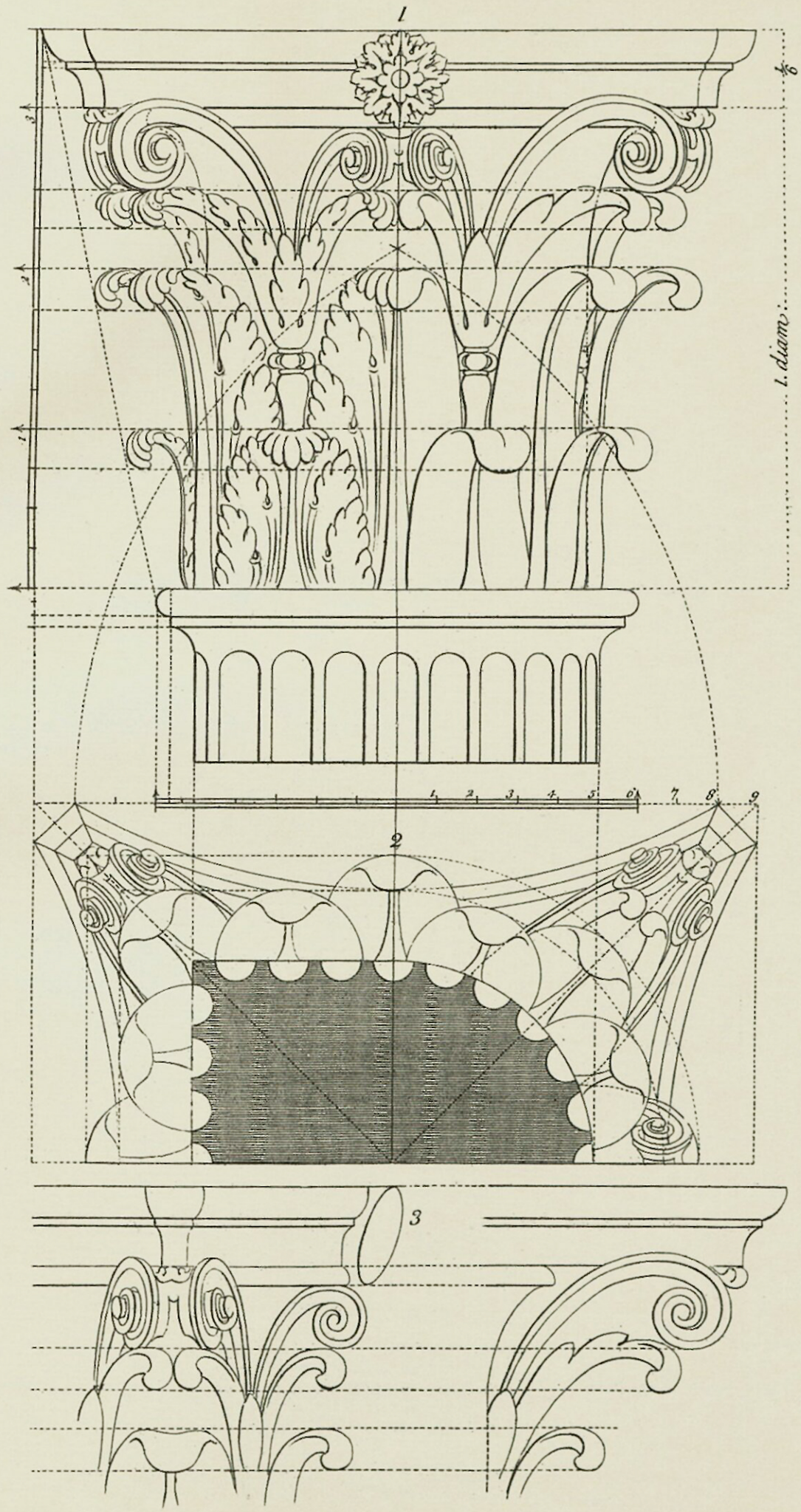
PLATE 17.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.

THE CORINTHIAN CAPITAL.

PLATE 124.

THERE are three figures on this plate. No. 1 is the upright of the capital. No. 2 the plan, being one-quarter part of a round and square column; as also of the capital with its projections. No. 3 the capital seen angular-wise and in profile, with its stems and cauliculi. The height of the capital is one diameter and $\frac{1}{6}$, including the abacus. Divide the height of the capital from the astragal to the under-part of the abacus into three parts, which give the height of the leaves and cauliculi; and each part being subdivided, as on the scale upon the left hand of the capital, will give the foldings of the leaves, which must not exceed in projection the oblique pricked line drawn from the astragal to the extremity of the abascus.



FROM GIBBS "RULES"

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.

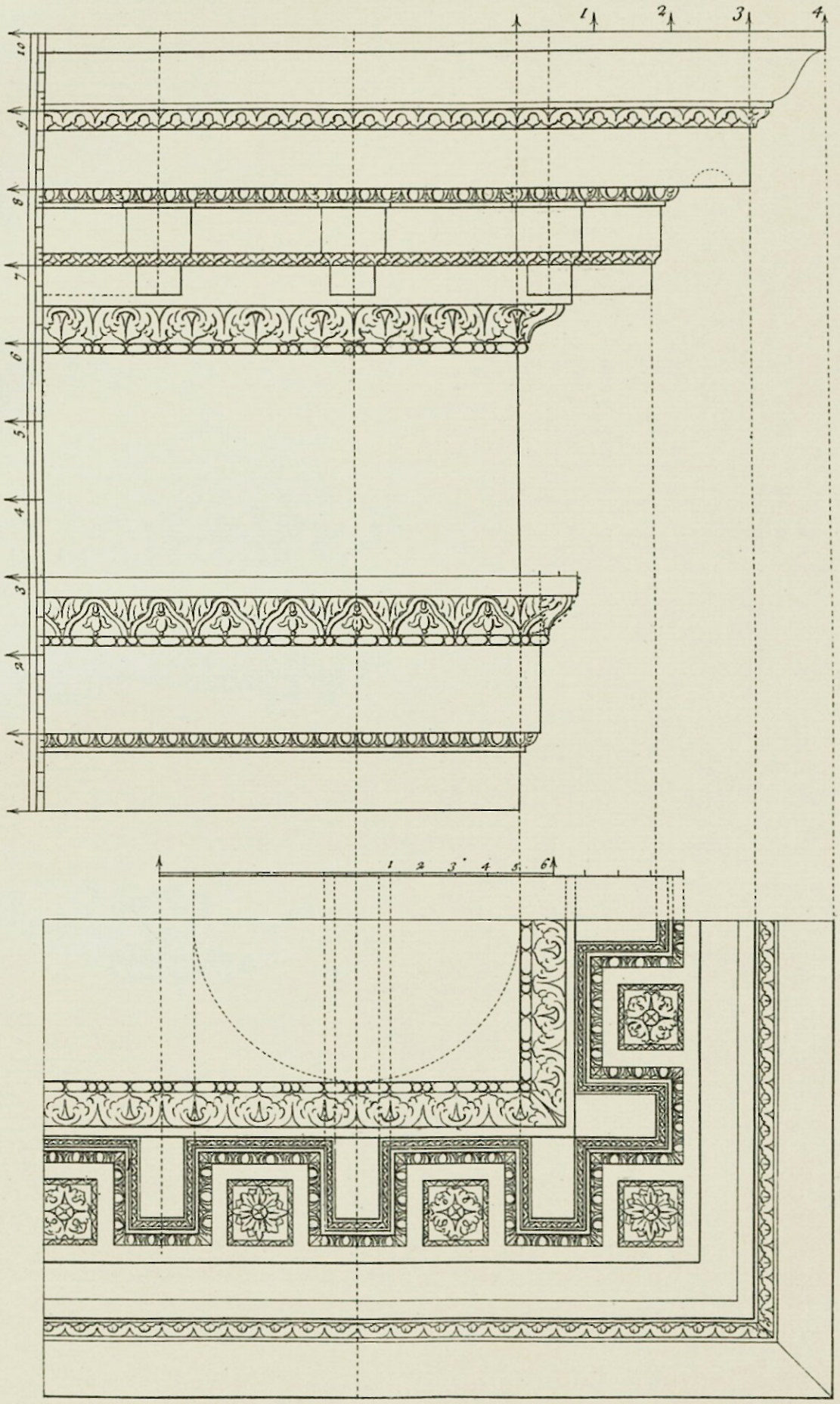
PLATE 19

THE COMPOSITE ENTABLATURE AND CORNICE.

PLATE 125.

THE height and projection of the Composite entablature is the same with that of the Corinthian; only the astragal under ogee at the bottom of the cornice is taken off the frieze. The cornice is drawn by itself on the next plate.

The height of the Composite cornice is divided into four parts; as also its projection. This cornice is in itself plain and easy, being taken from the Ionic modillion-cornice; from which this differs only in the form of the modillion. The upright line *A B* is the middle of the column, and *C D* is the diminished part of it, from whence the cornice doth project, equal to its height. If $\frac{1}{4}$ of the scale below be divided into six parts, five give the bigness of the modillion. The astragal under the ogee at the bottom is not a part of the cornice, but belongs to the height of the frieze.



FROM GIBBS "RULES"

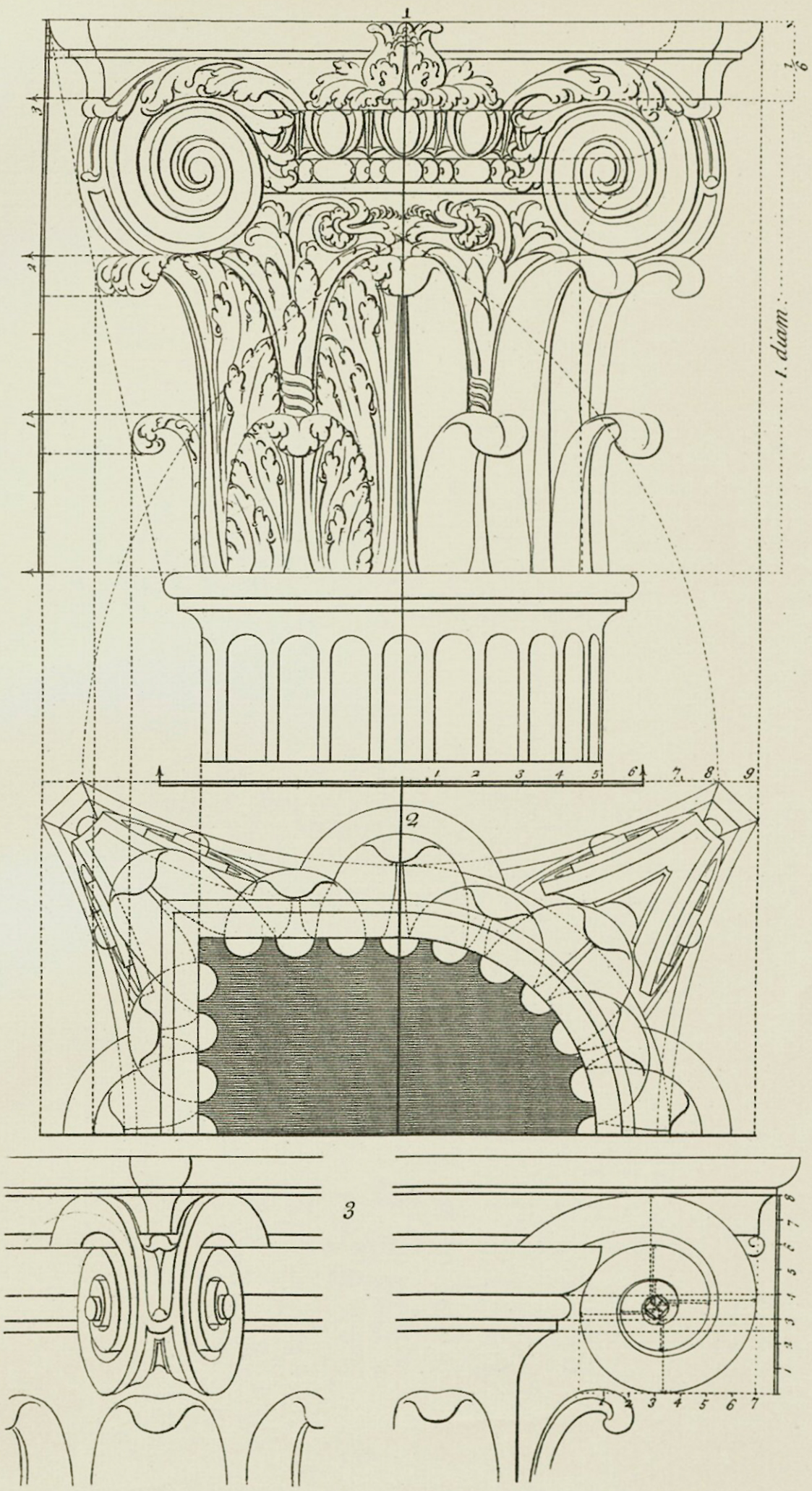
PLATE 21.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.

THE COMPOSITE CAPITAL.

PLATE 126.

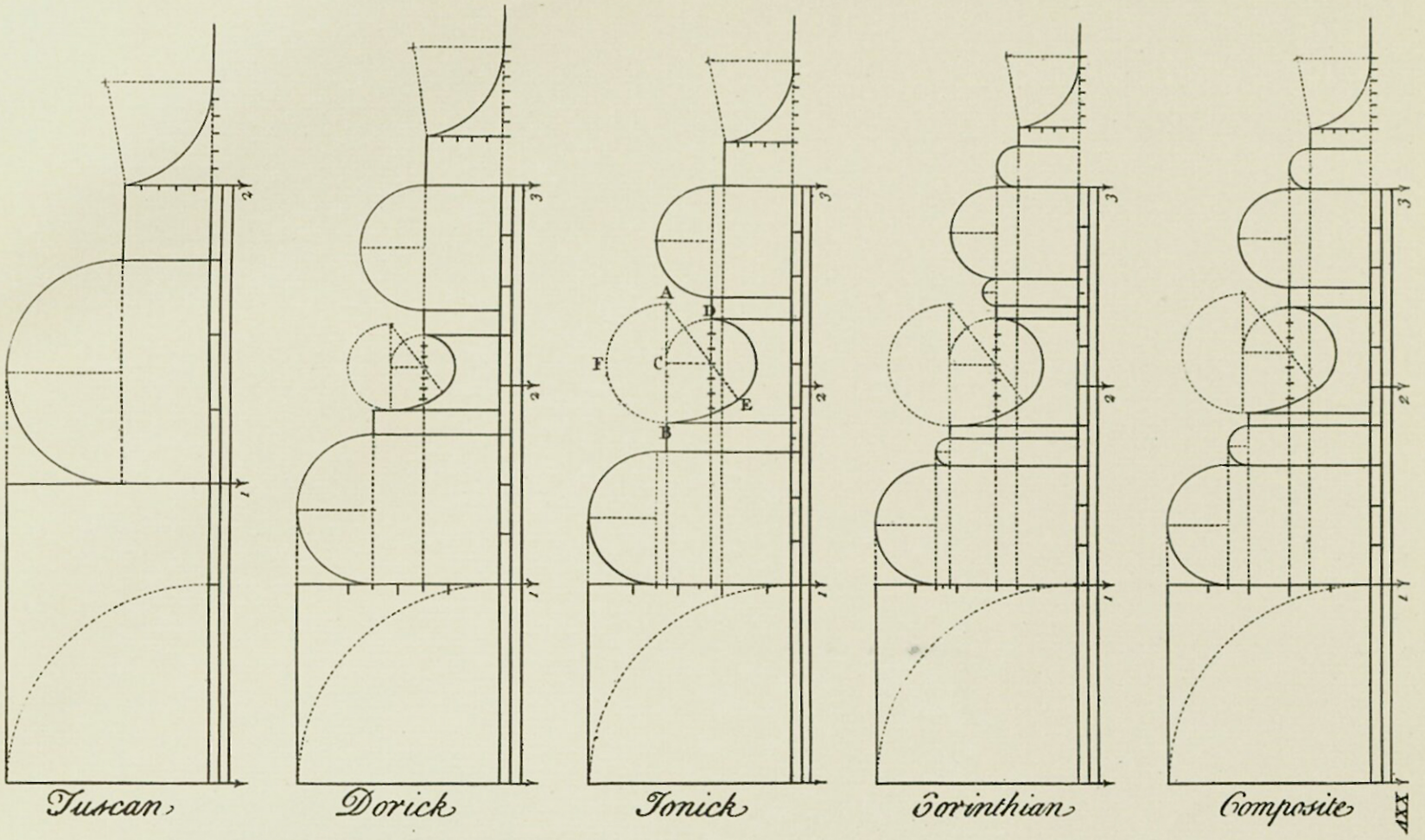
THE three figures here exhibit: (No. 1) The upright of the capital. (No. 2) The plan of the round and square column, and the capital with its projections. (No. 3) The capital seen on its angle and in profile. The volute is the same as in the Ionic. The height of the capital, including the abacus, is one diameter and $\frac{1}{6}$, as that of the Corinthian is; and so are the height of the leaves and their foldings.

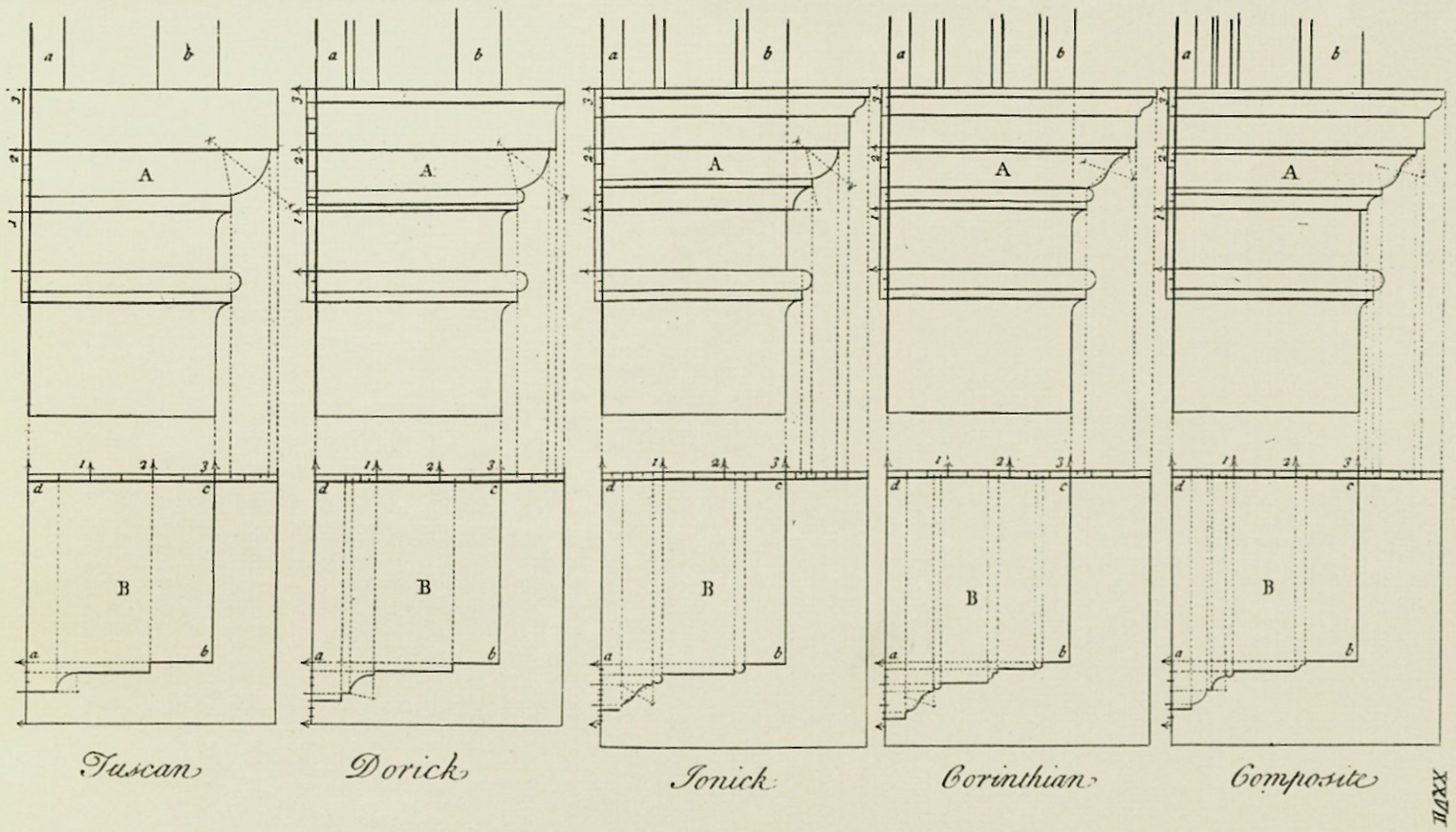


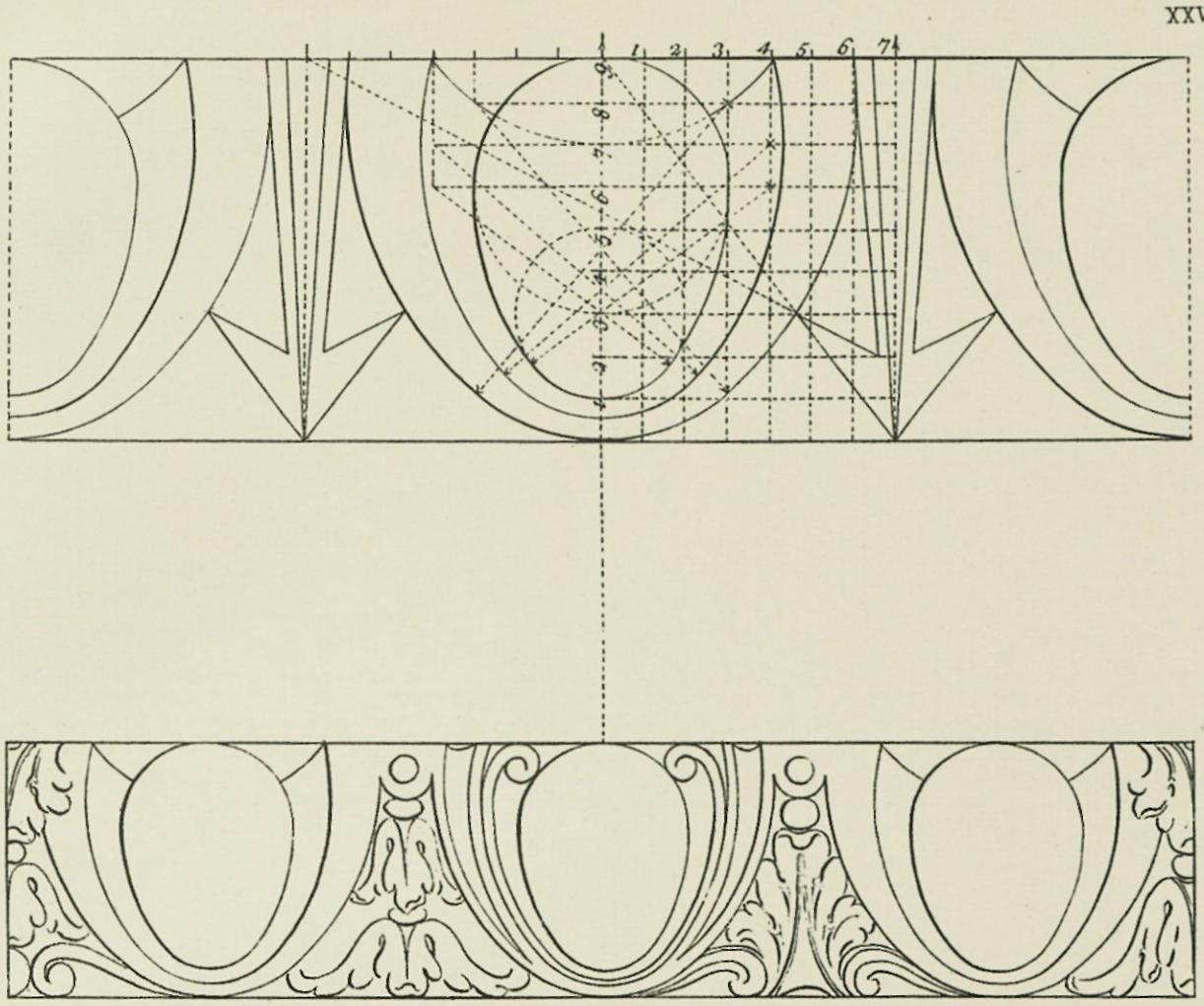
FROM GIBBS "RULES"

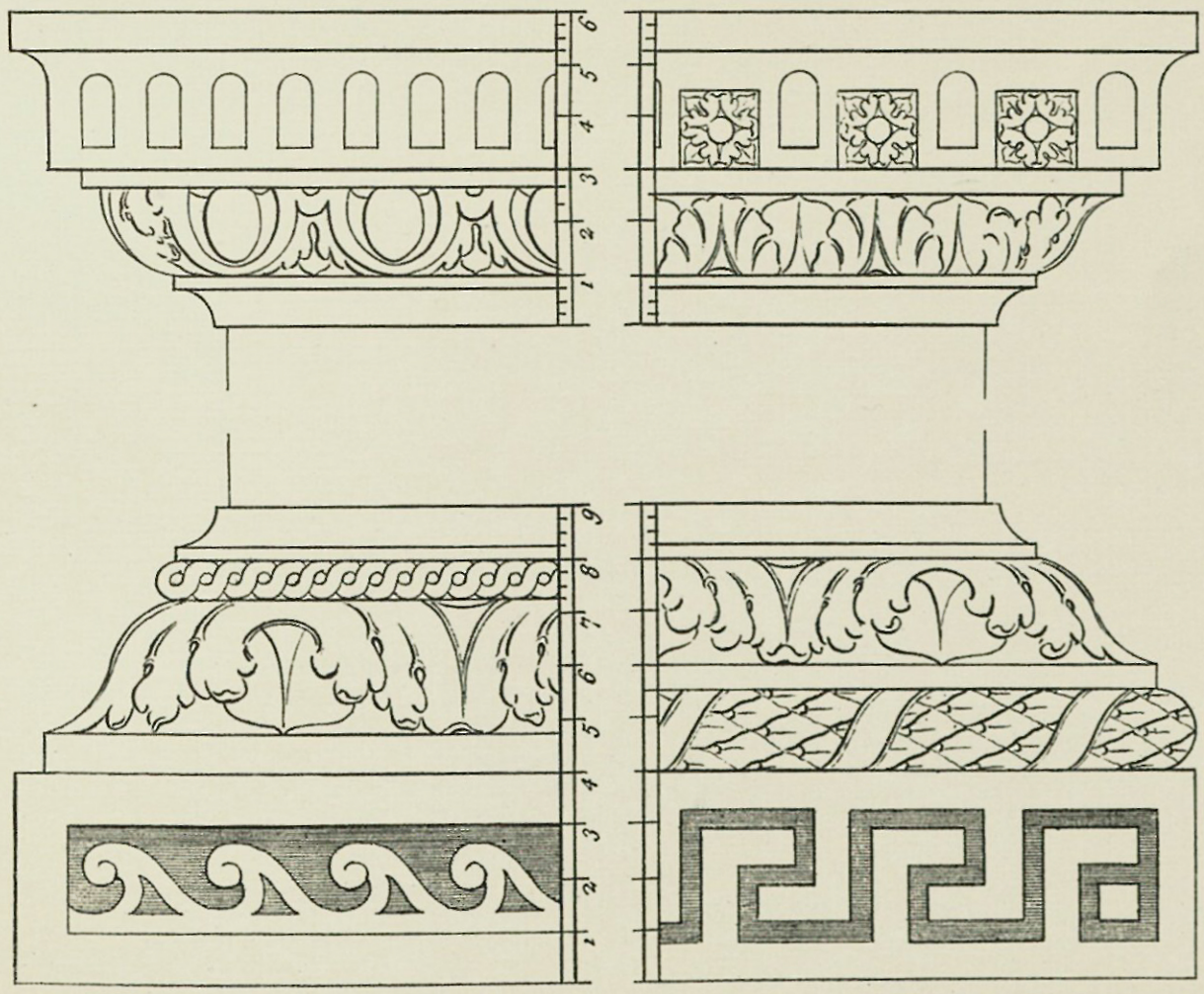
PLATE 23

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.


A
D
F
C
E
B
Tuscan
Dorick
Ionick
Corinthian
Composite

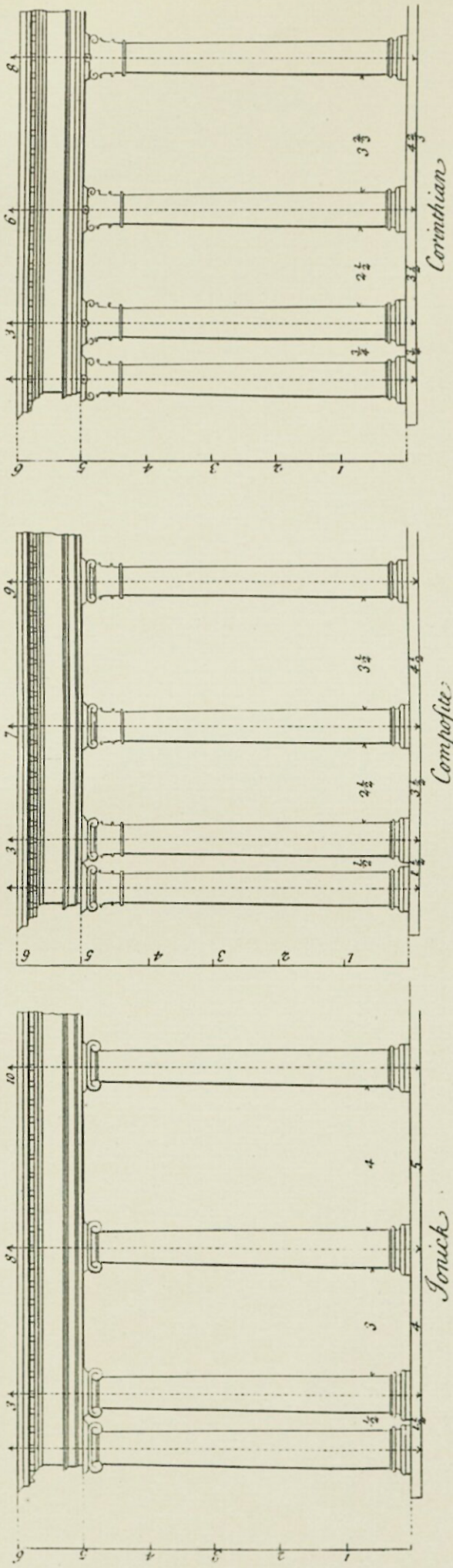

a
b
A
B
d
c
Tuscan
Dorick
Ionick
Corinthian
Composite





FROM GIBBS' "RULES"

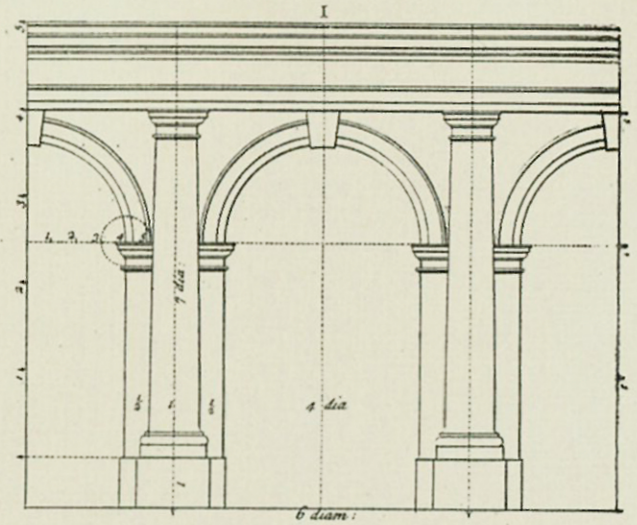
XXIX



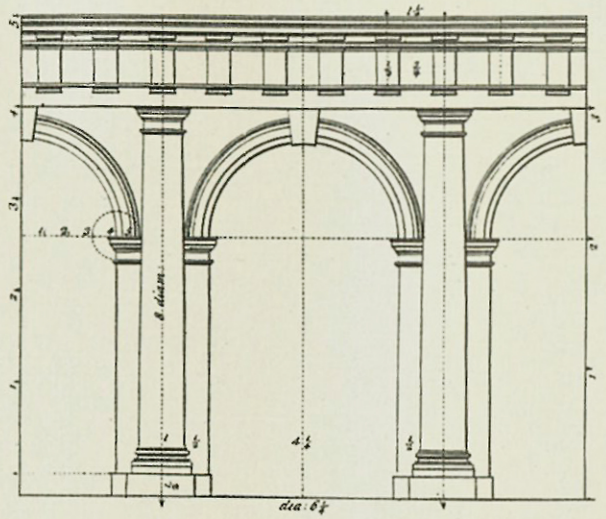
FROM GIBBS' "RULES"

XXX

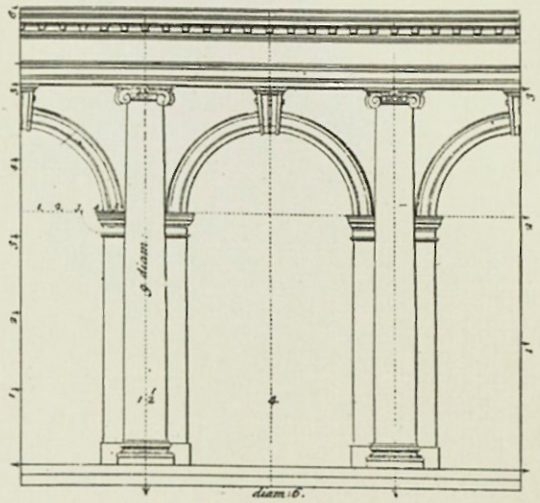
I



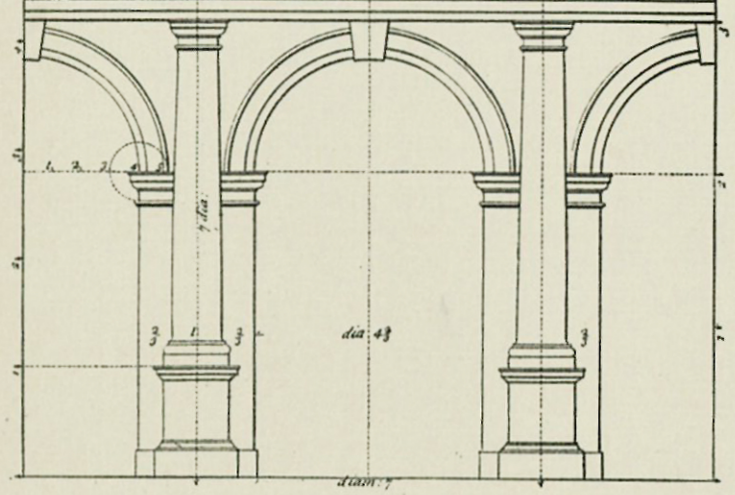
XXXI

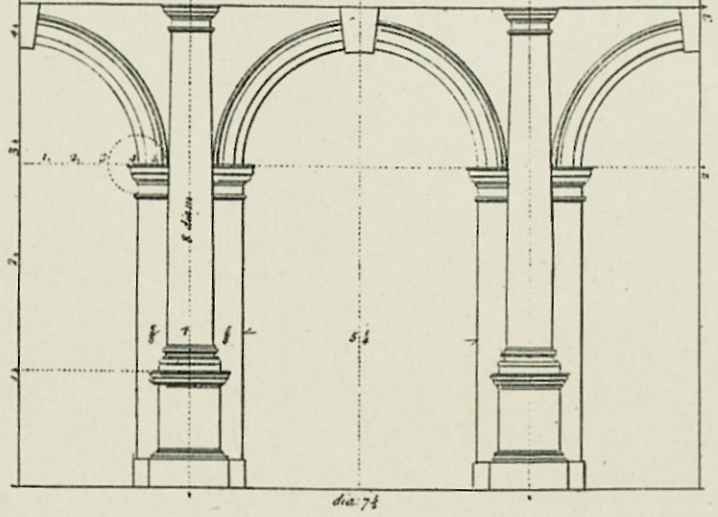


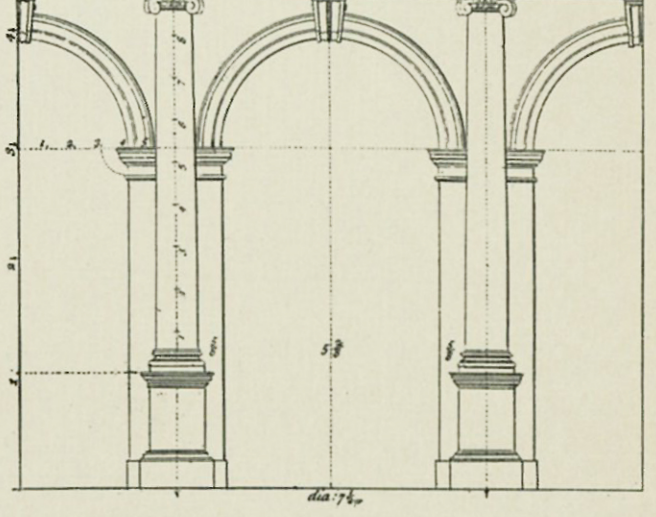
XXXII

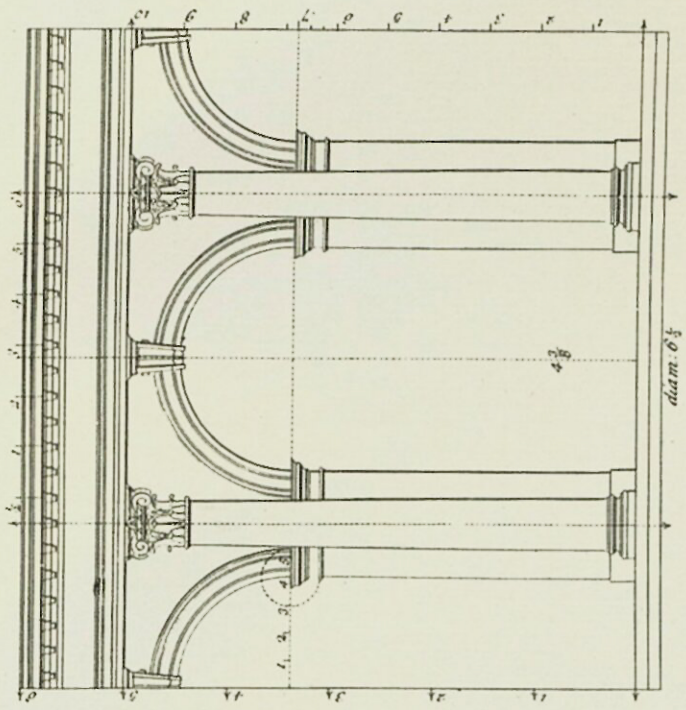


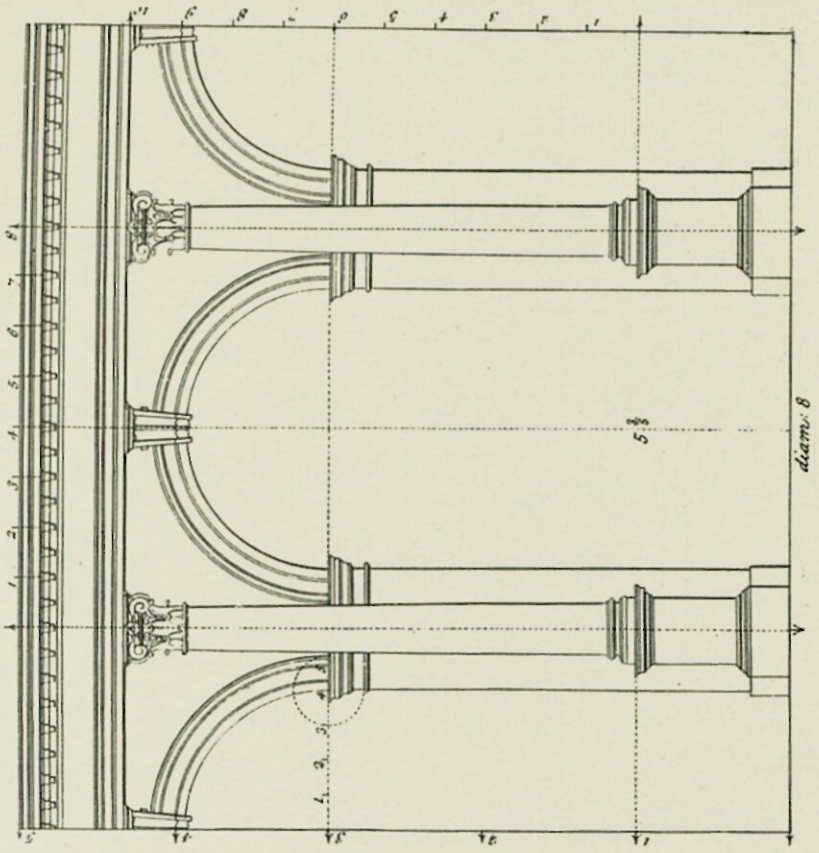
II

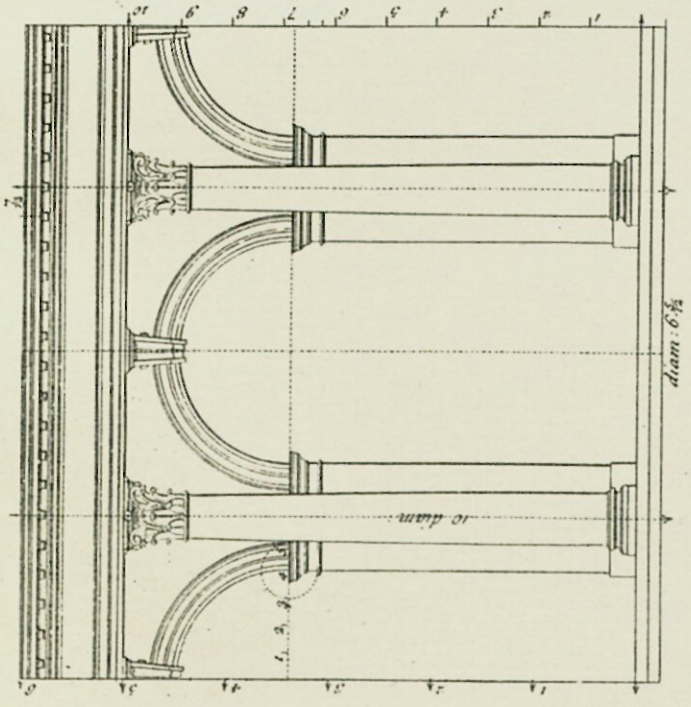


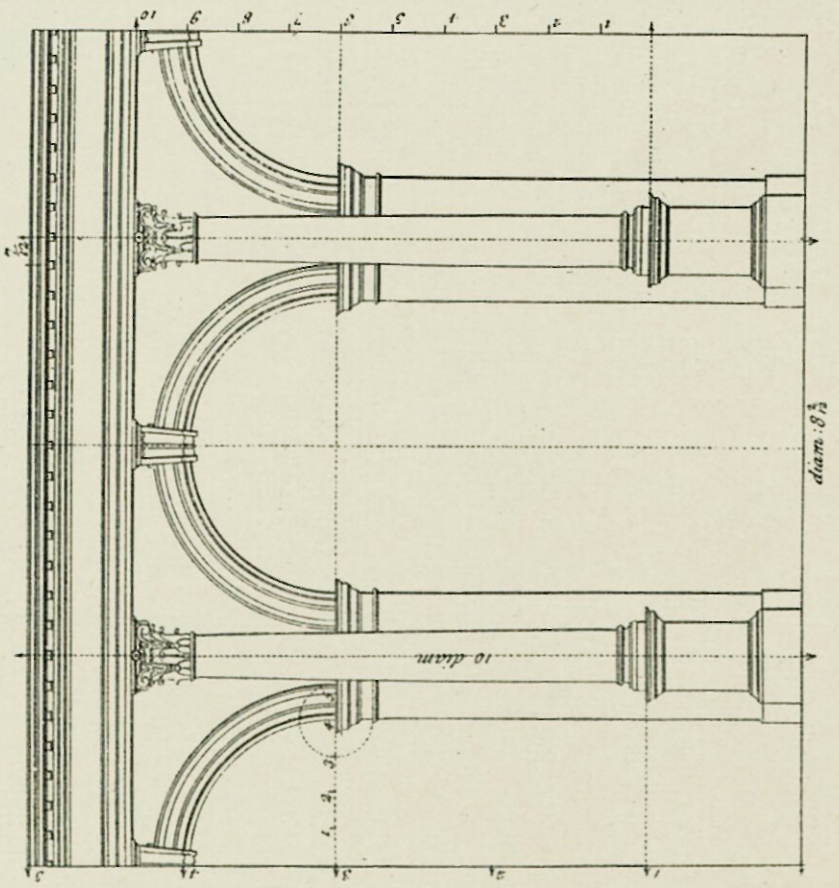




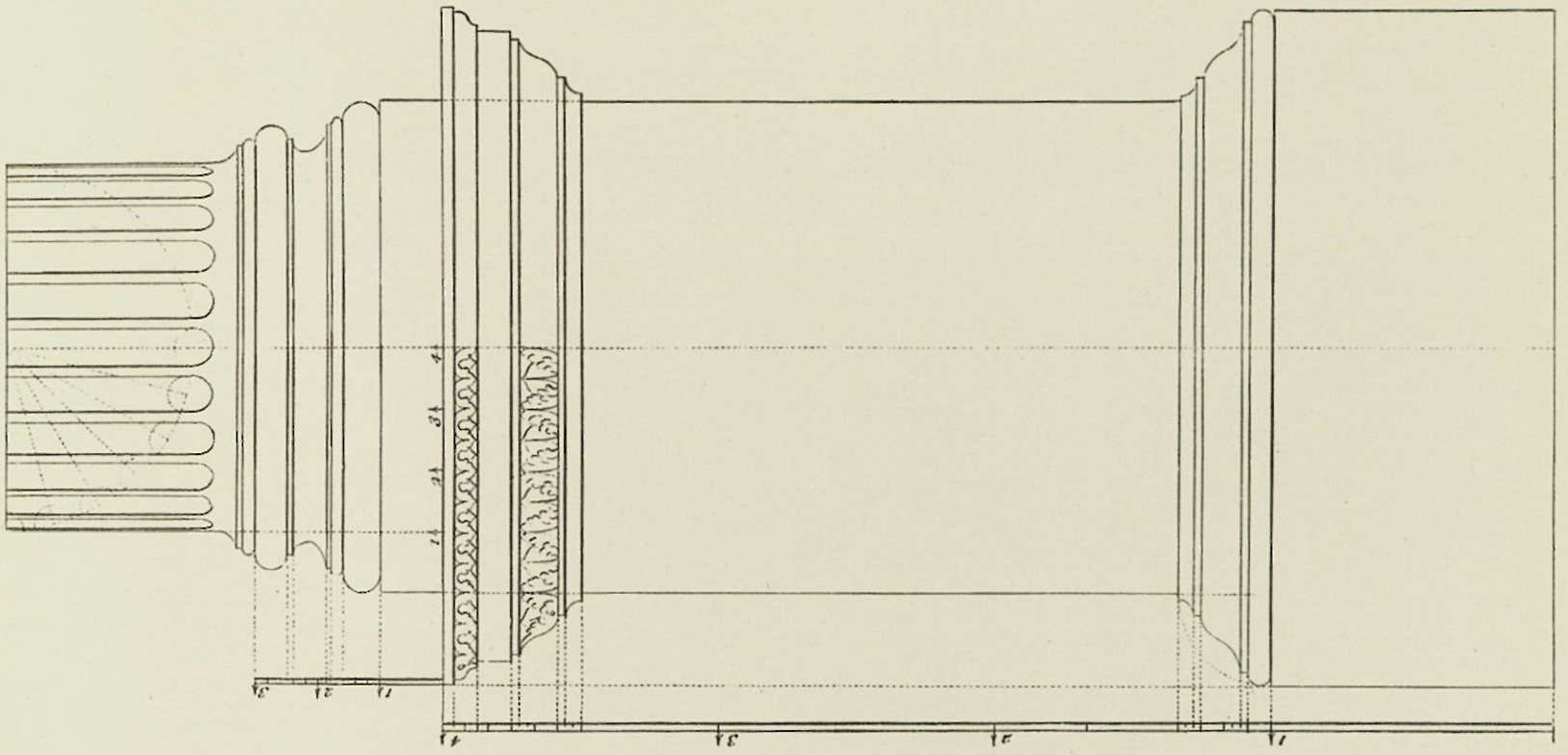

diam: 6½
4⅜

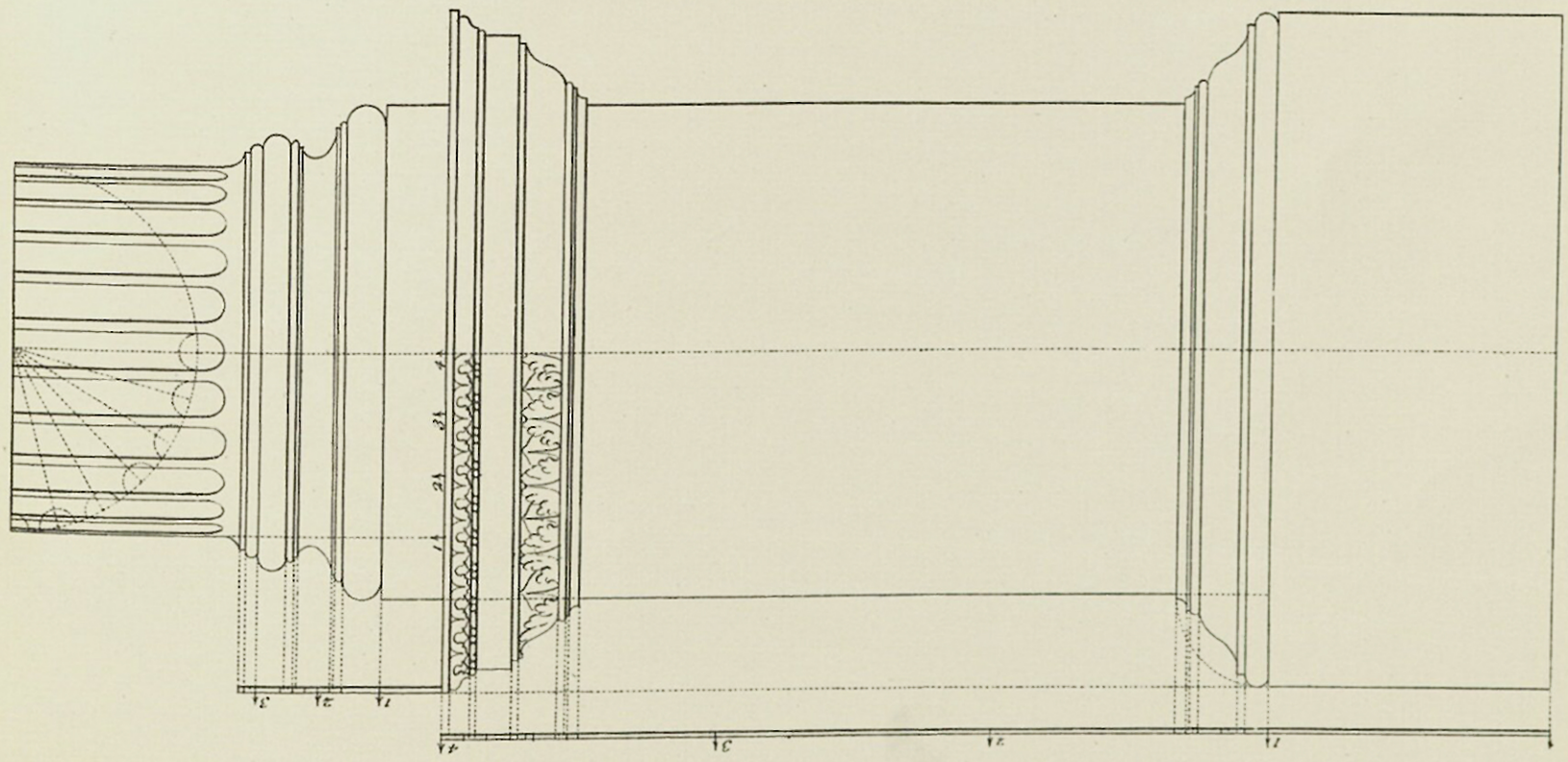

diam: 8
5⅜


10 diam.
diam: 6½

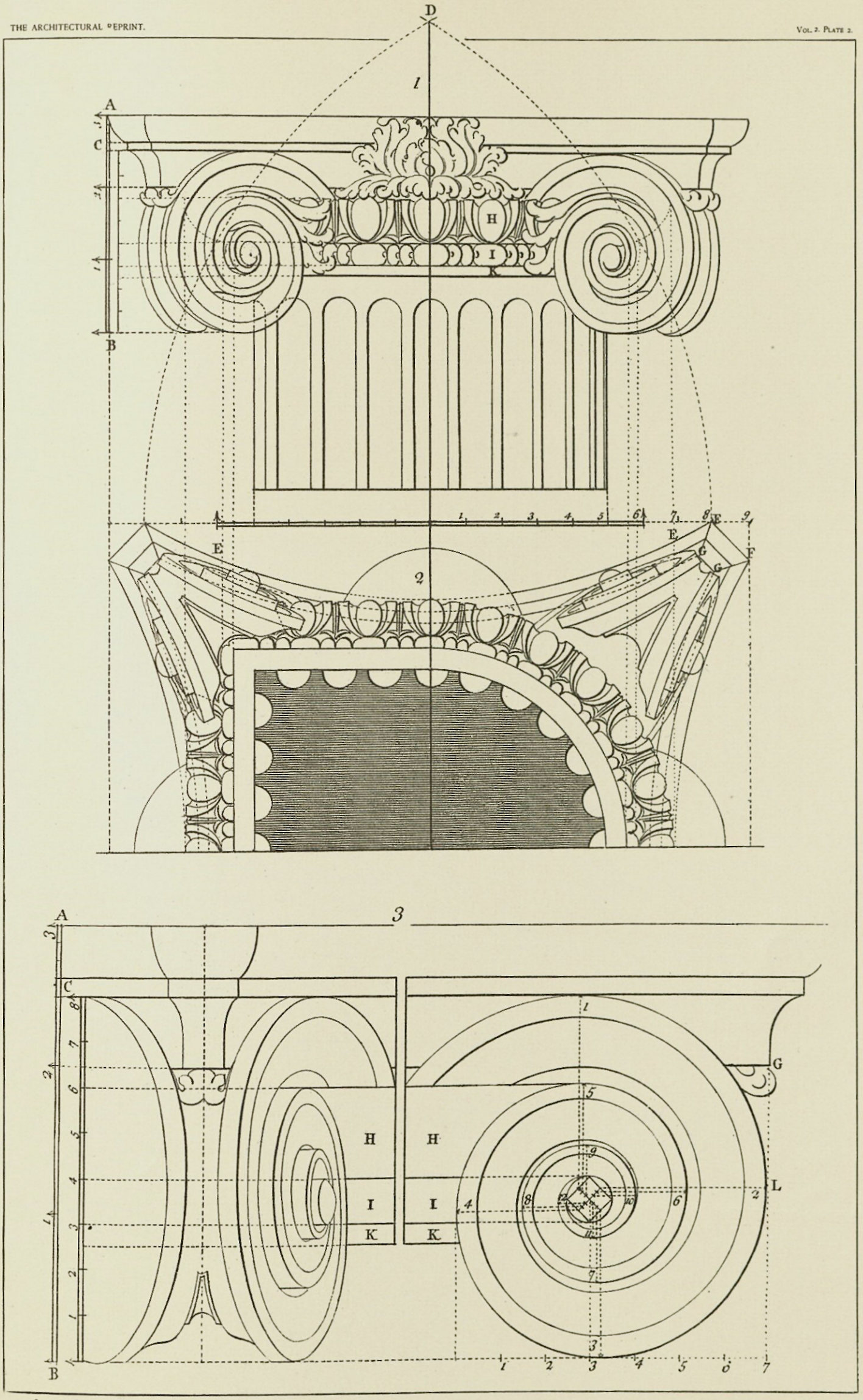

10 diam.
diam: 8⅛

XX



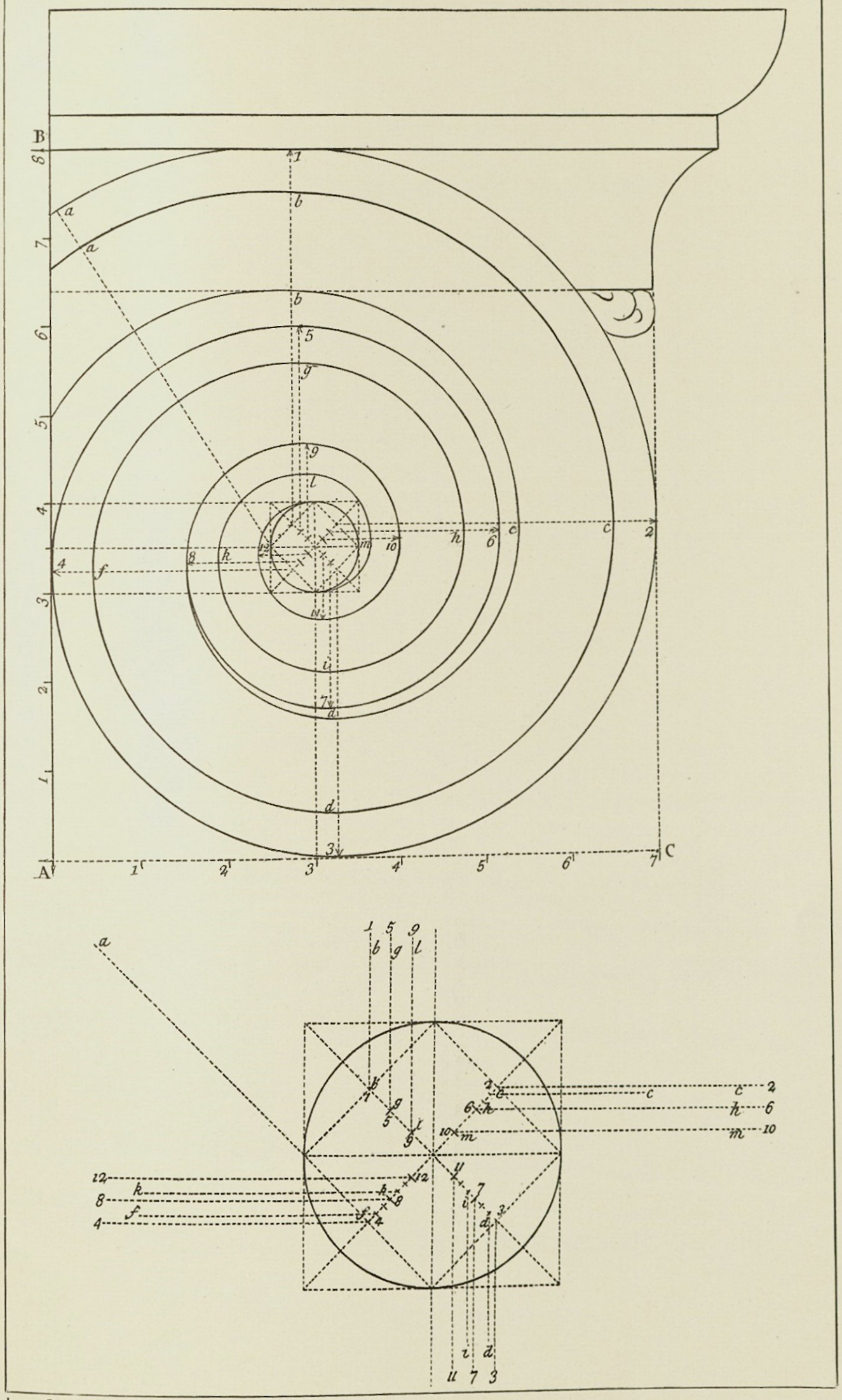


FROM GIBBS' "RULES"



JAMES GIBBS. LONDON, 1737.

ANDREW B. GRAHAM. PHOTO LITHO WASHINGTON, D.C.



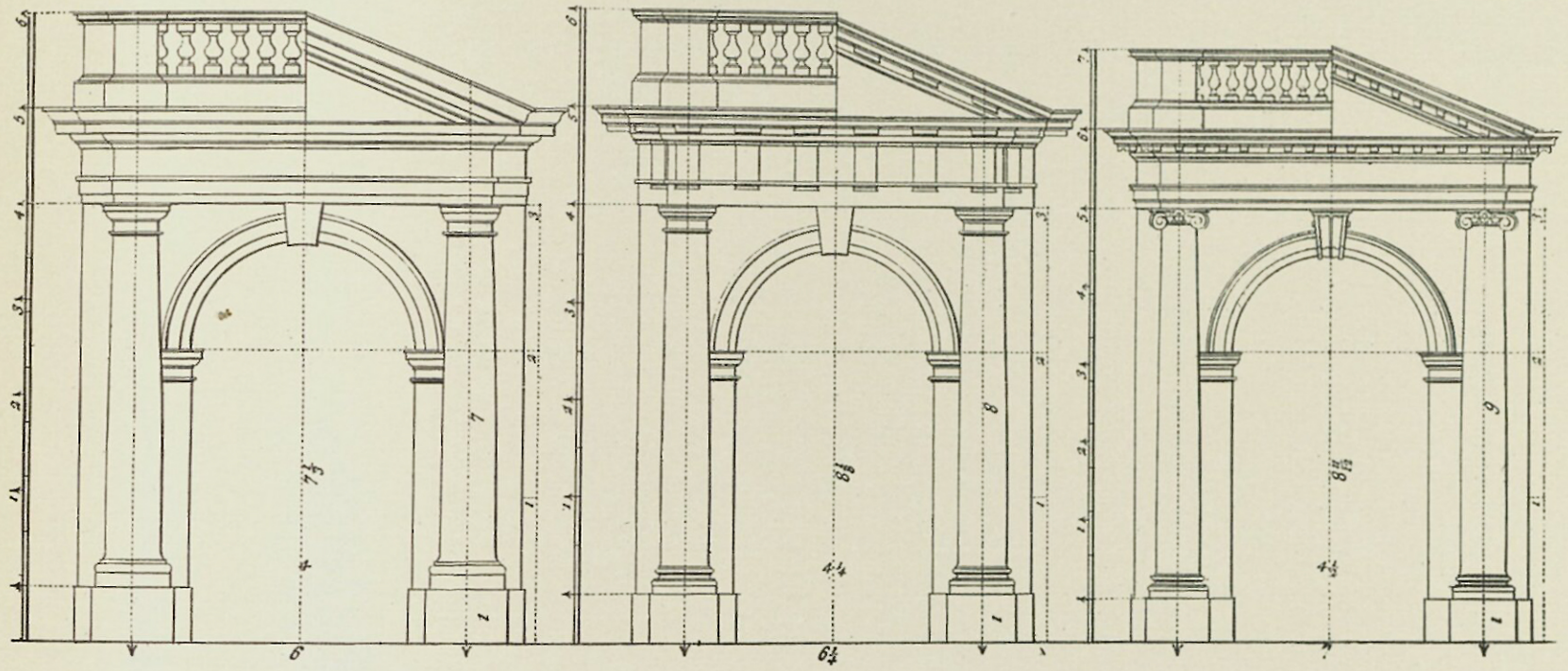
JAMES GIBBS. LONDON, 1737.

ANDREW B. GRAHAM. PHOTO LITHO. WASHINGTON. D.C.

Tuscan N.o 1

Dorick N.o 2.

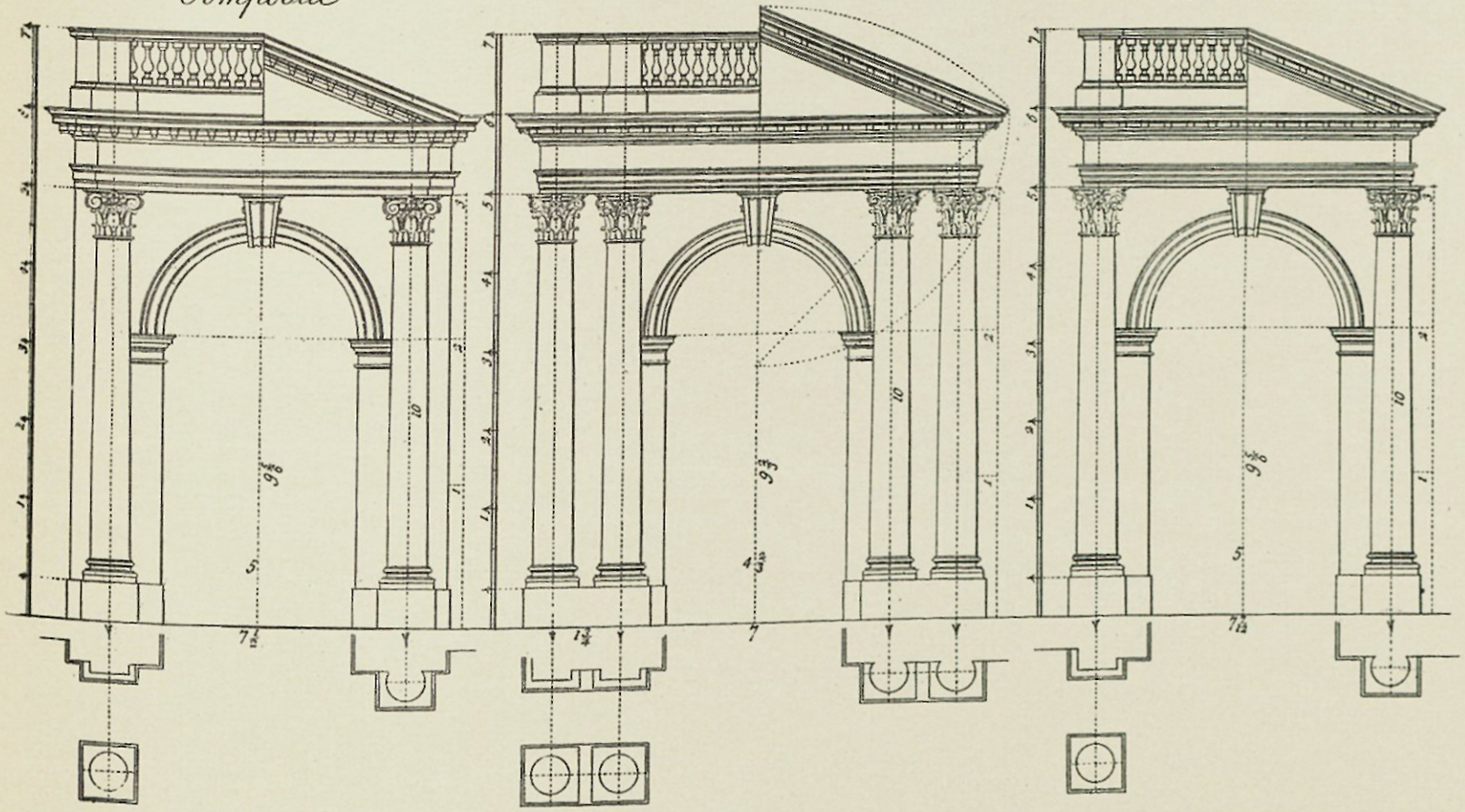
Tonick N.o 3



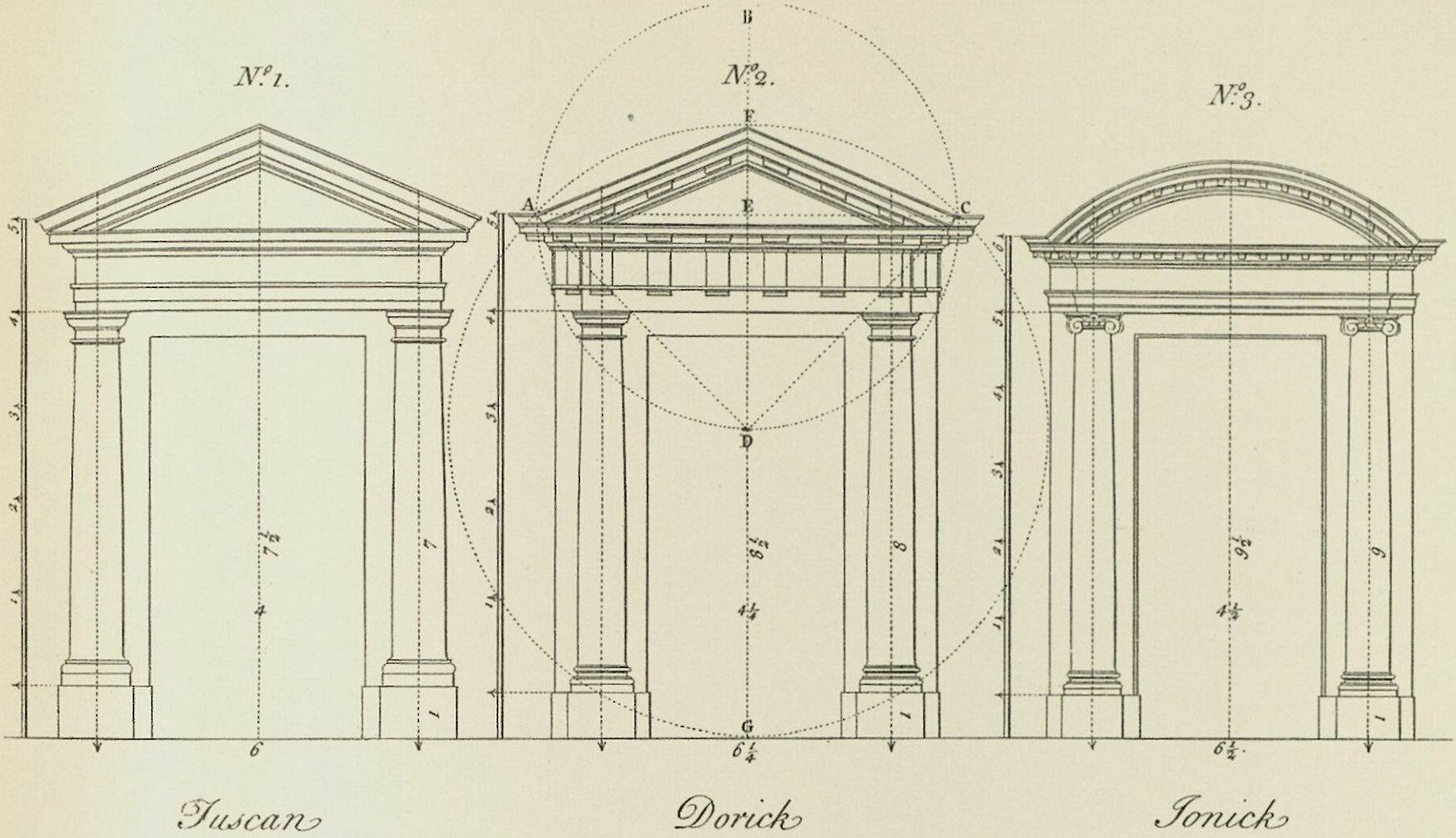
N.o 1.
Composite

N.o 2.
Corinthian

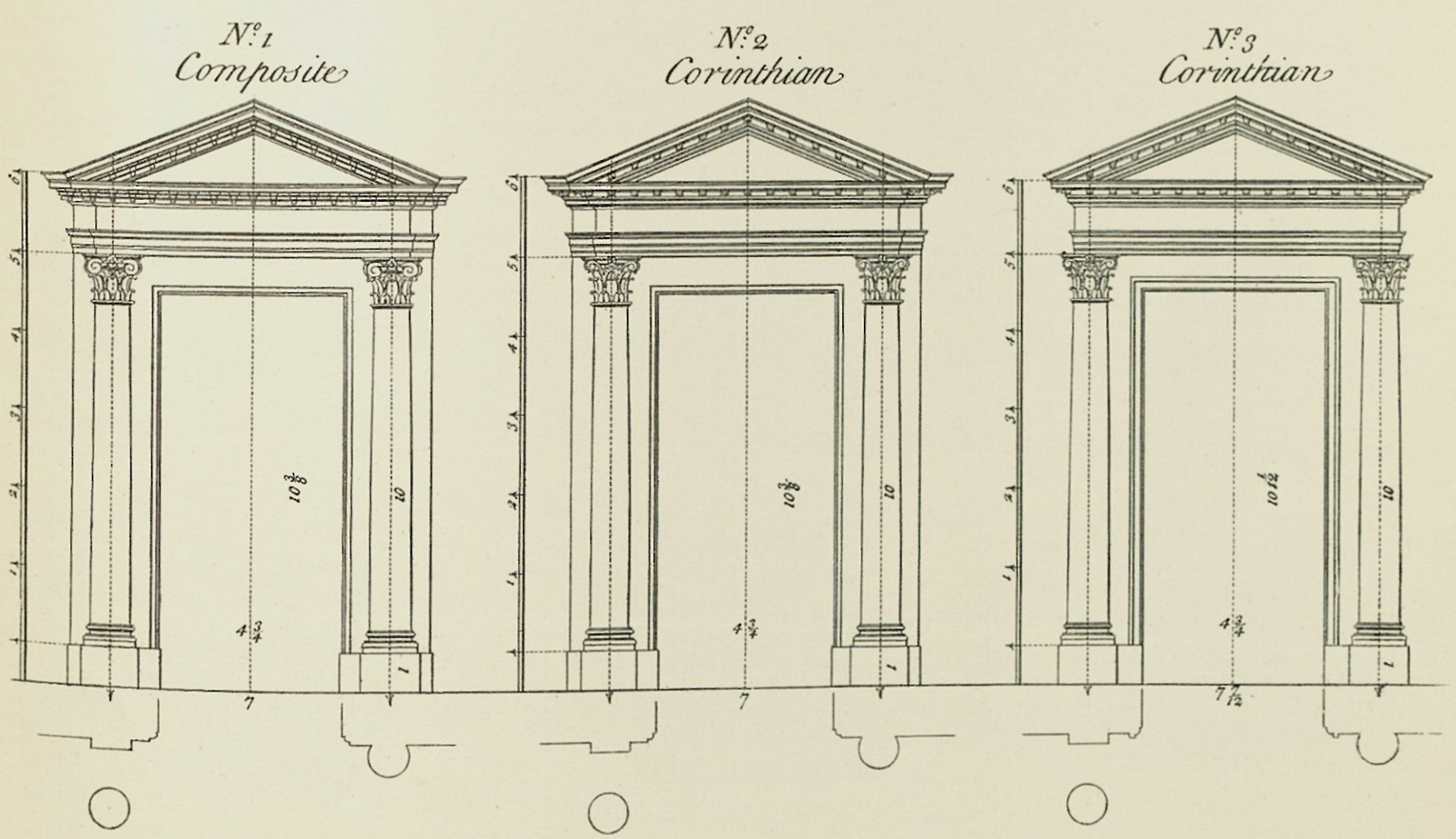
N.o 3
Corinthian



TX



Tuscan Dorick Jonick



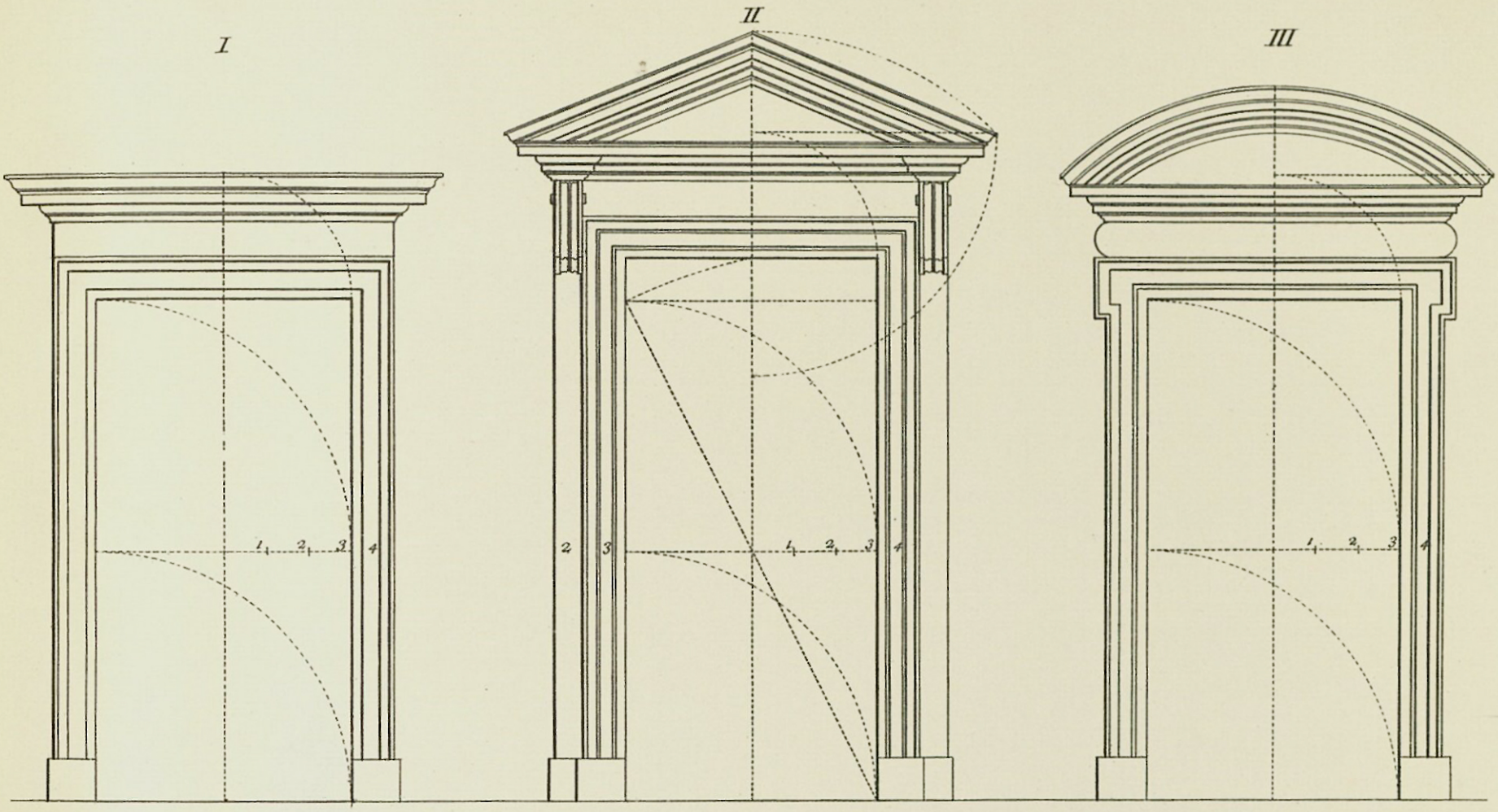
JAMES GIBBS. LONDON, 1737.

ANDREW B. GRAHAM, PHOTO-LITHO WASHINGTON, D.C.

I

II

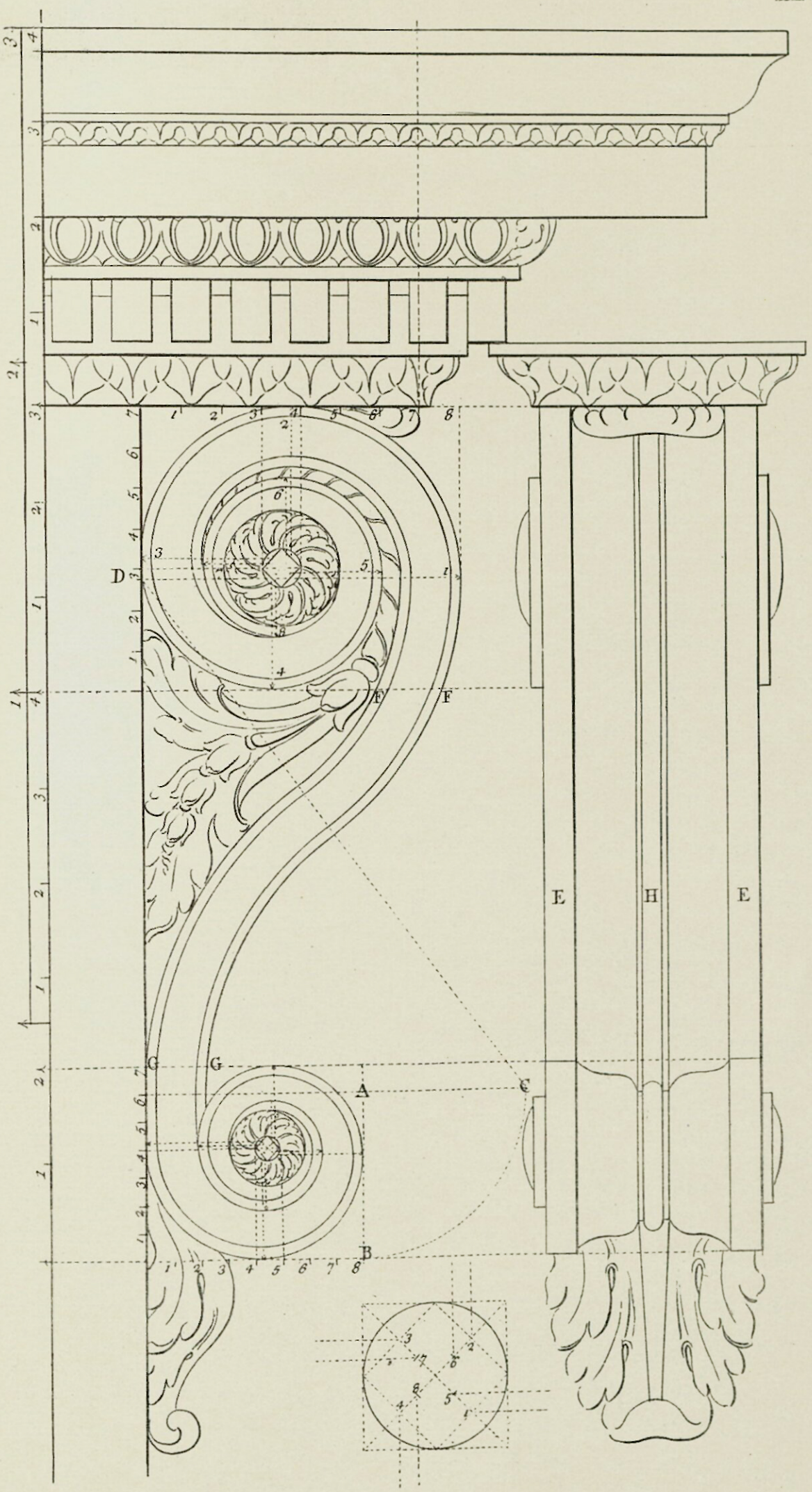
III



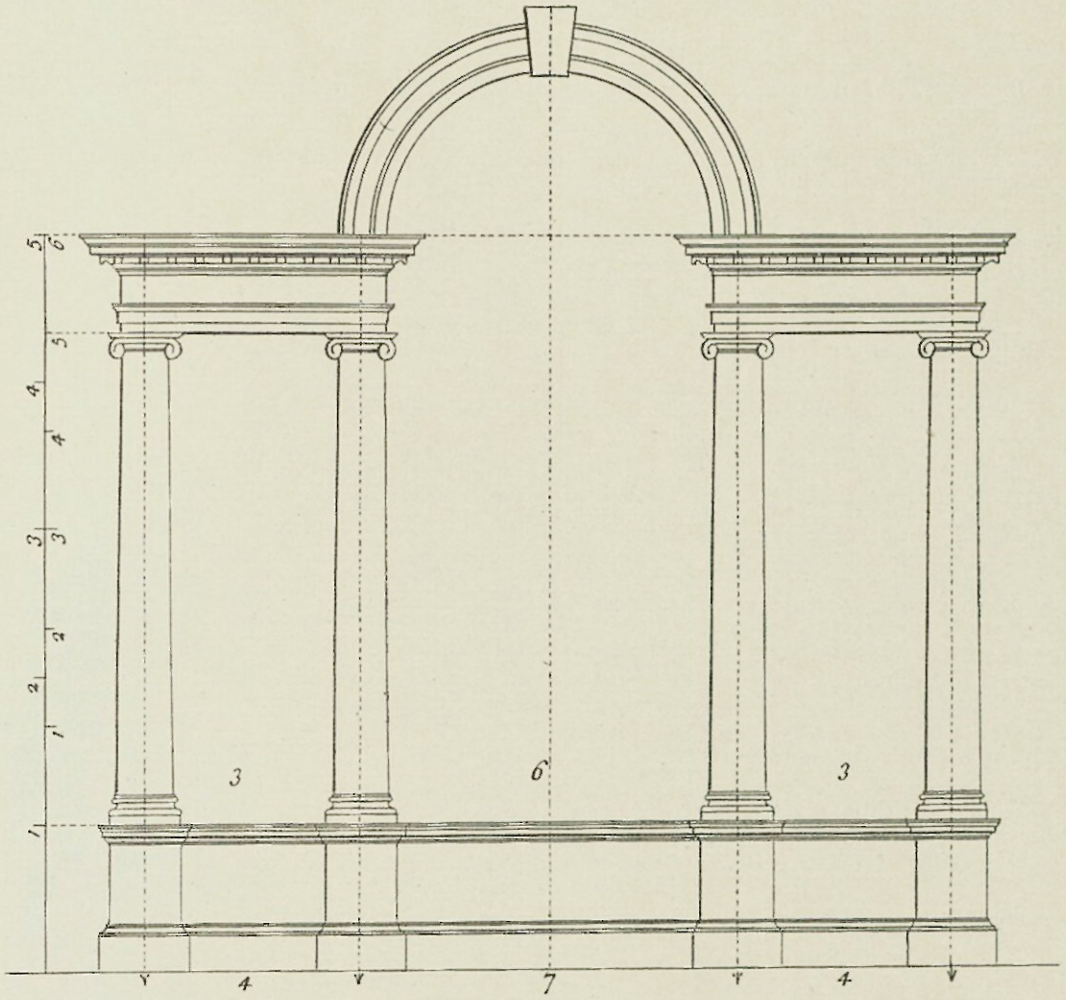
JAMES GIBBS. LONDON, 1737.

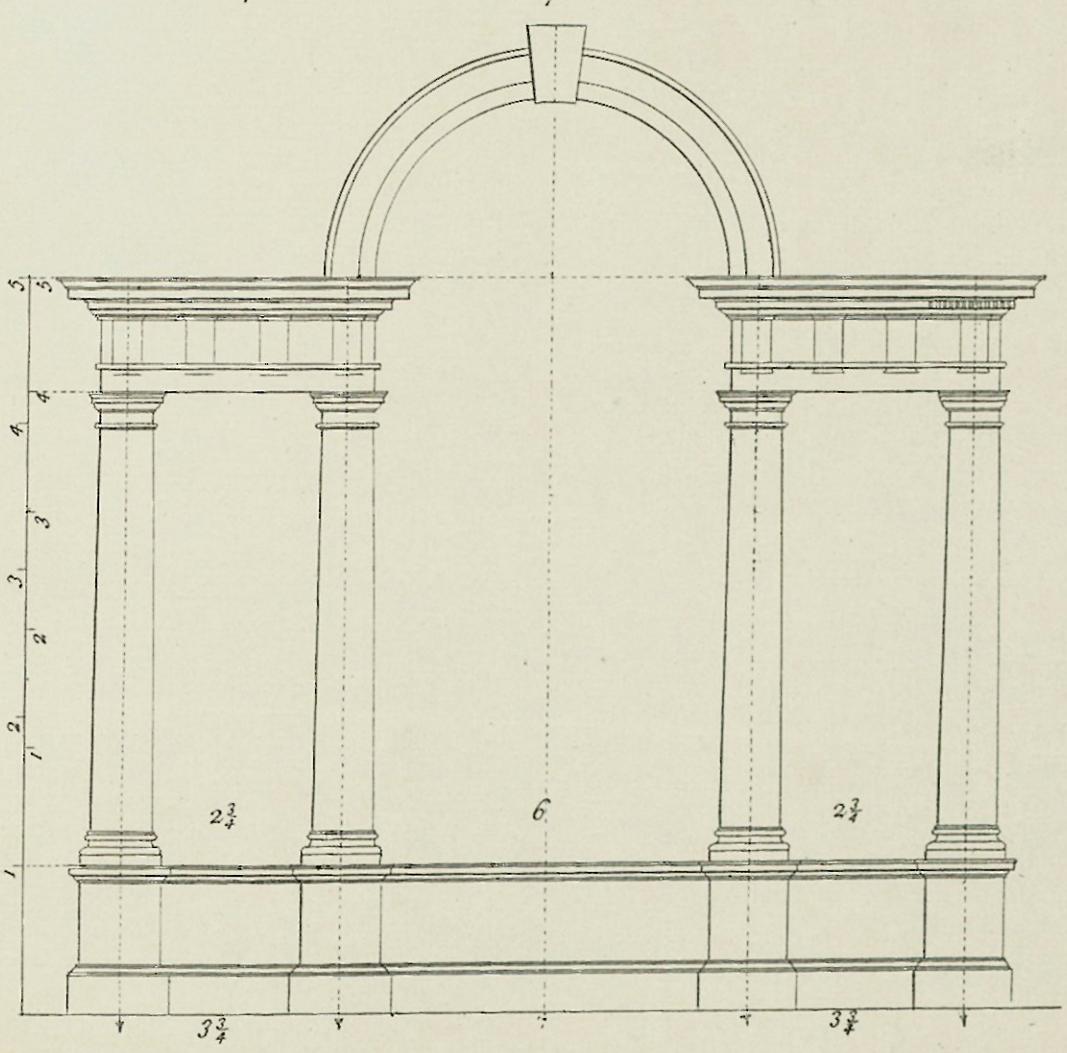
ANDREW B GRAHAM PHOTO-LITHO WASHINGTON D.C.

XLVII

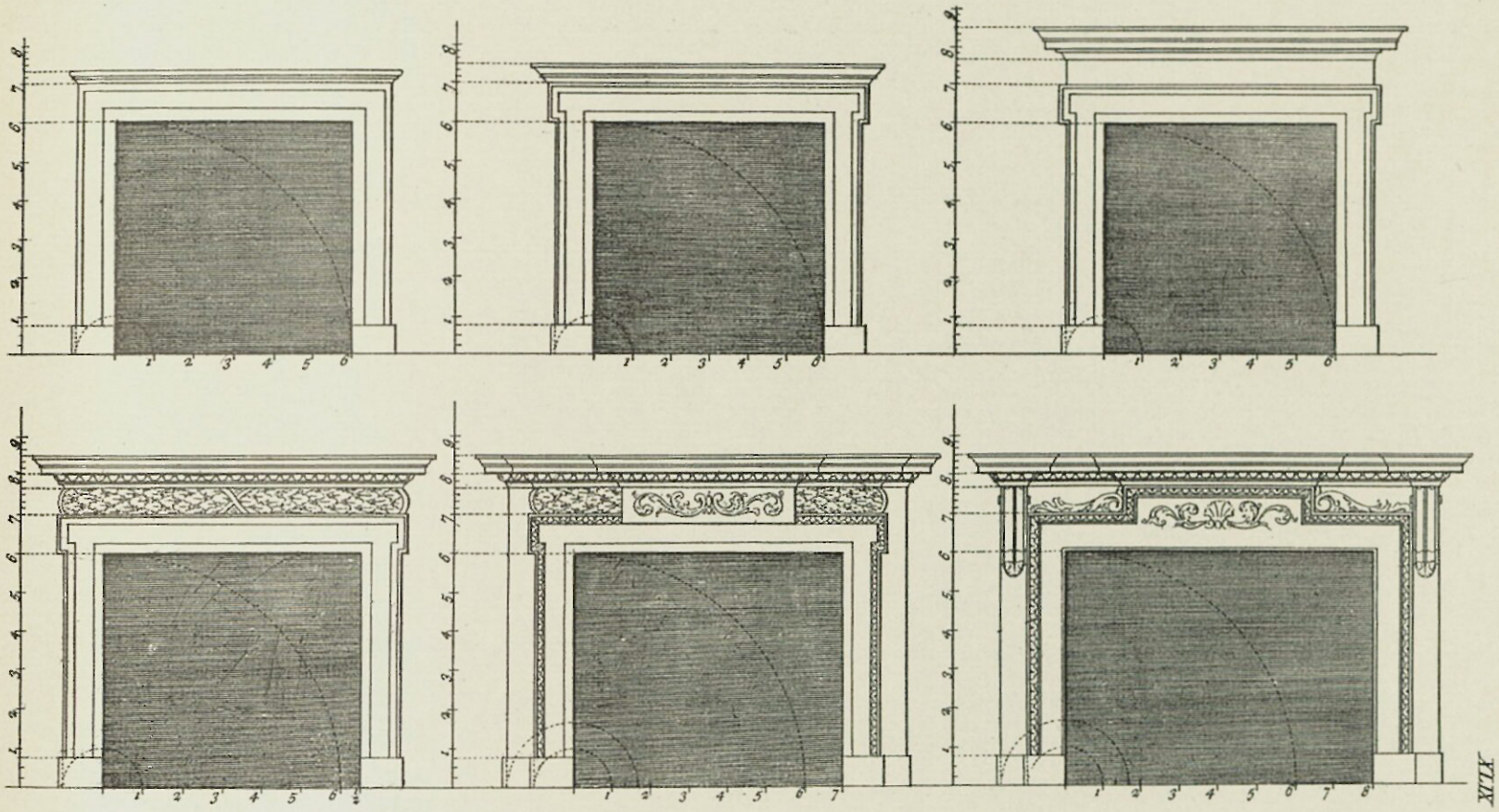


XLVIII

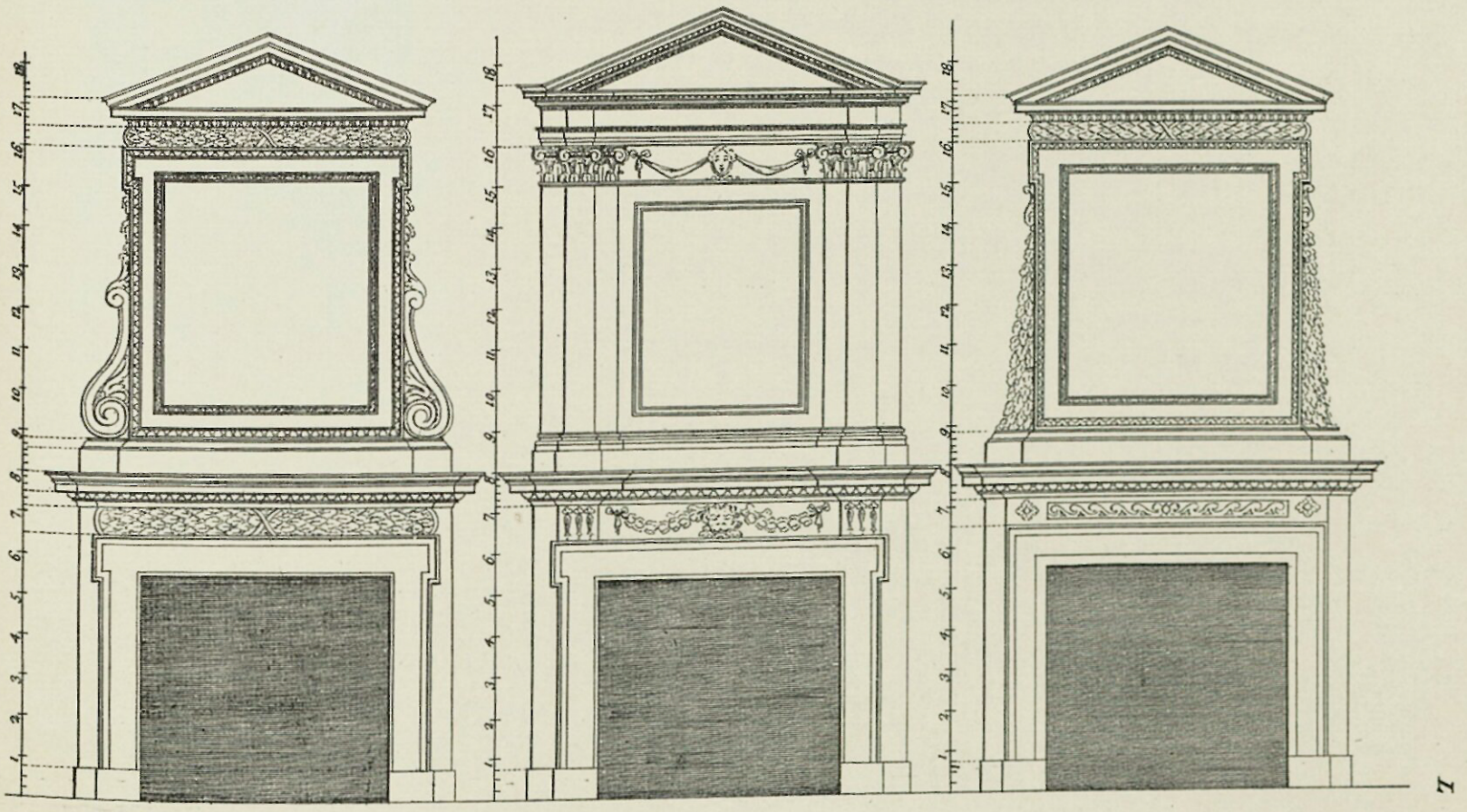




FROM GIBBS' "RULES"

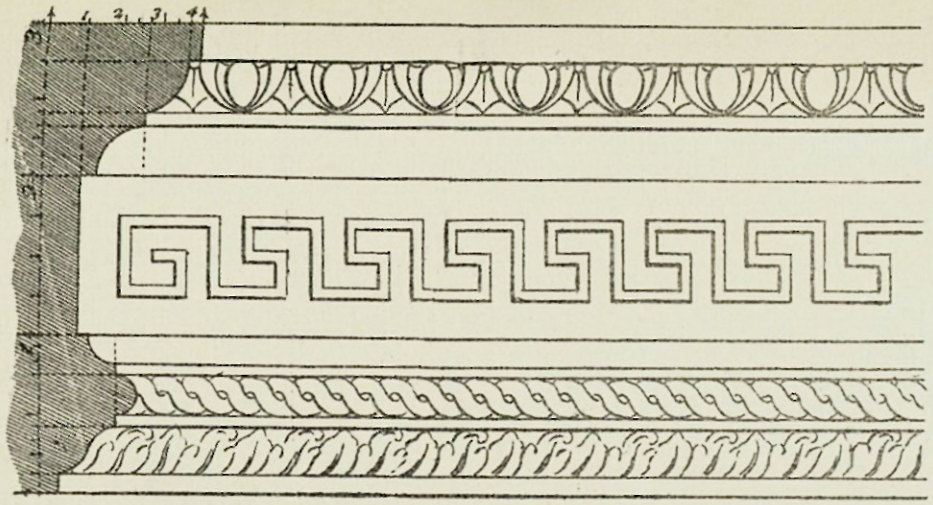


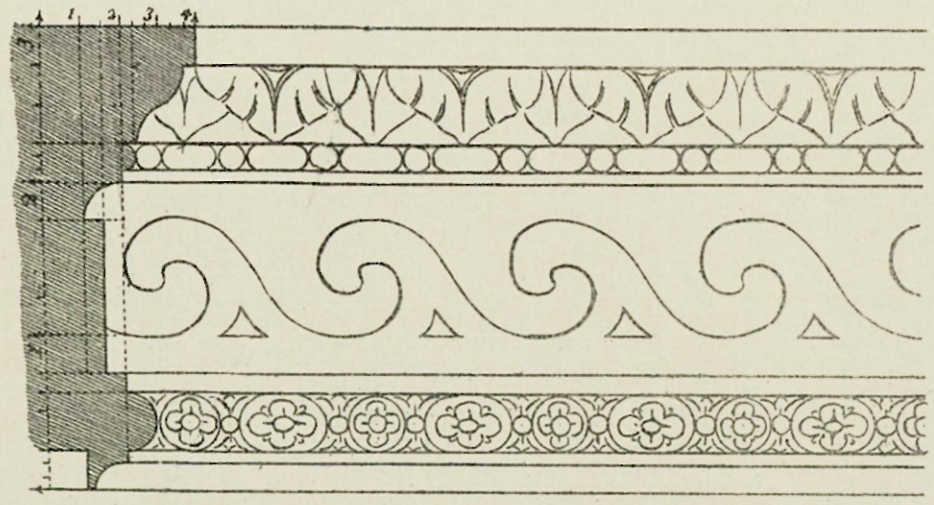
XLIX

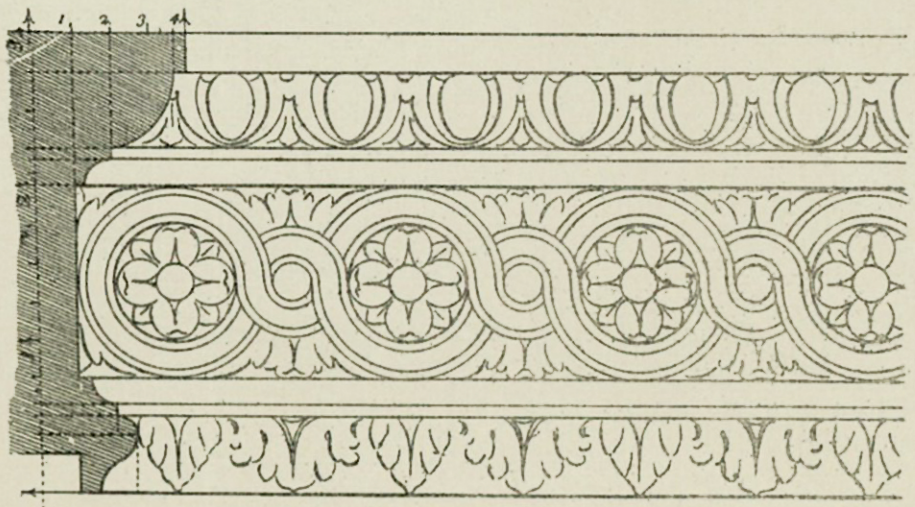


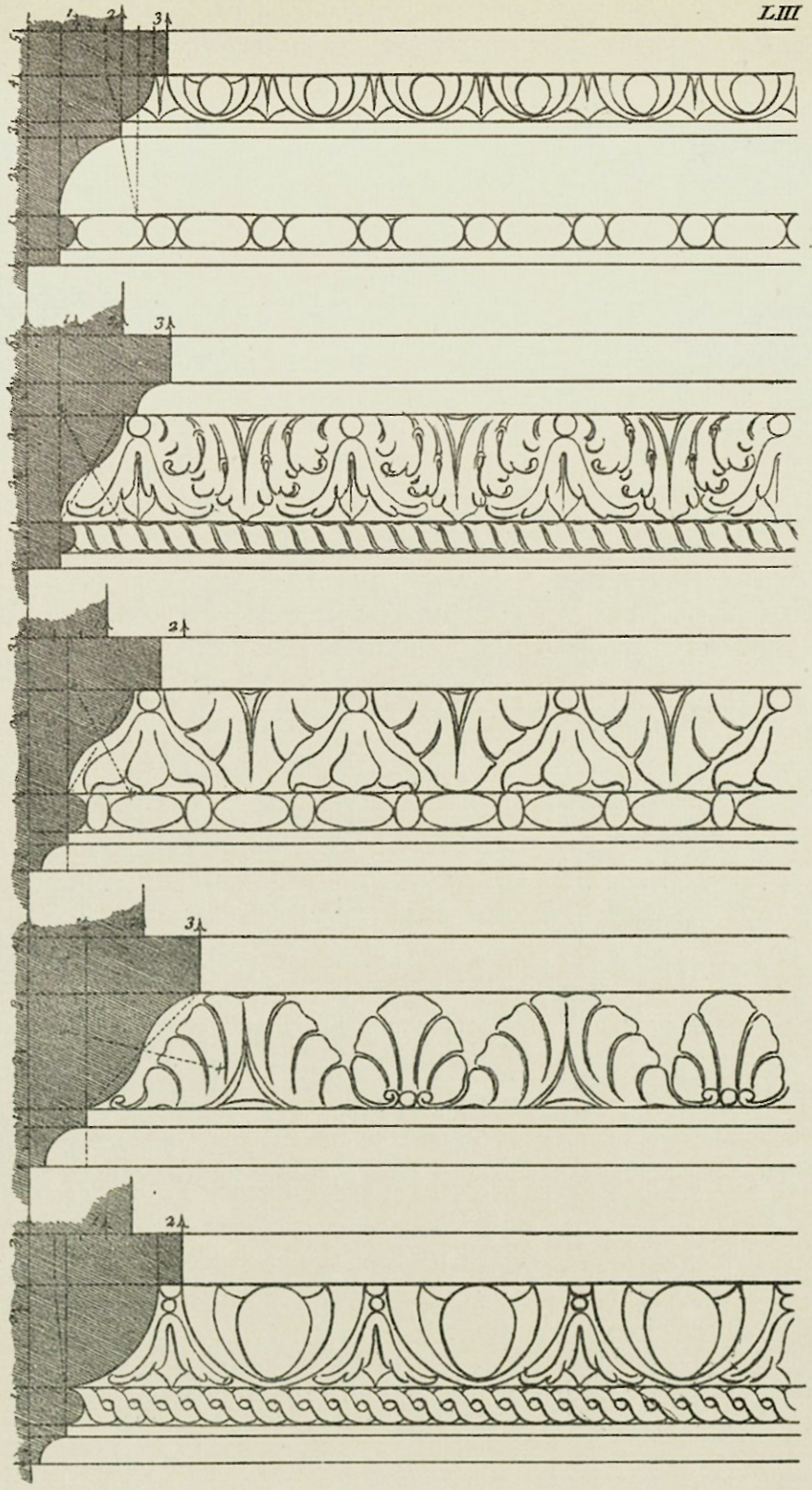
Z

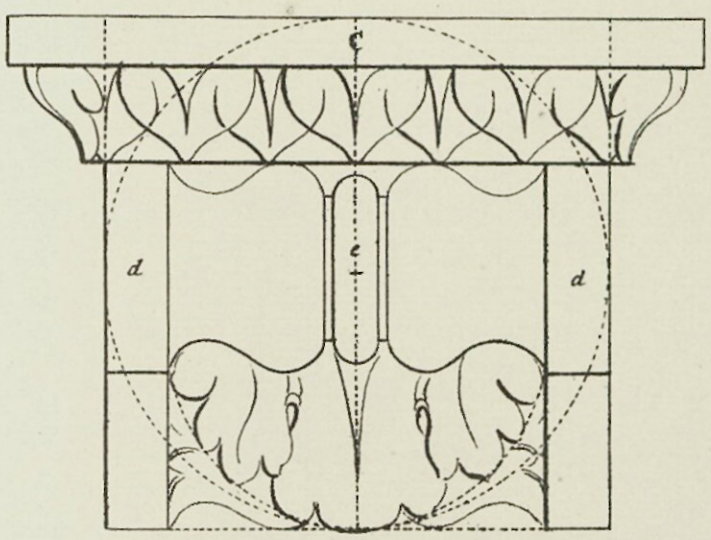
FROM GIBBS' "RULES"

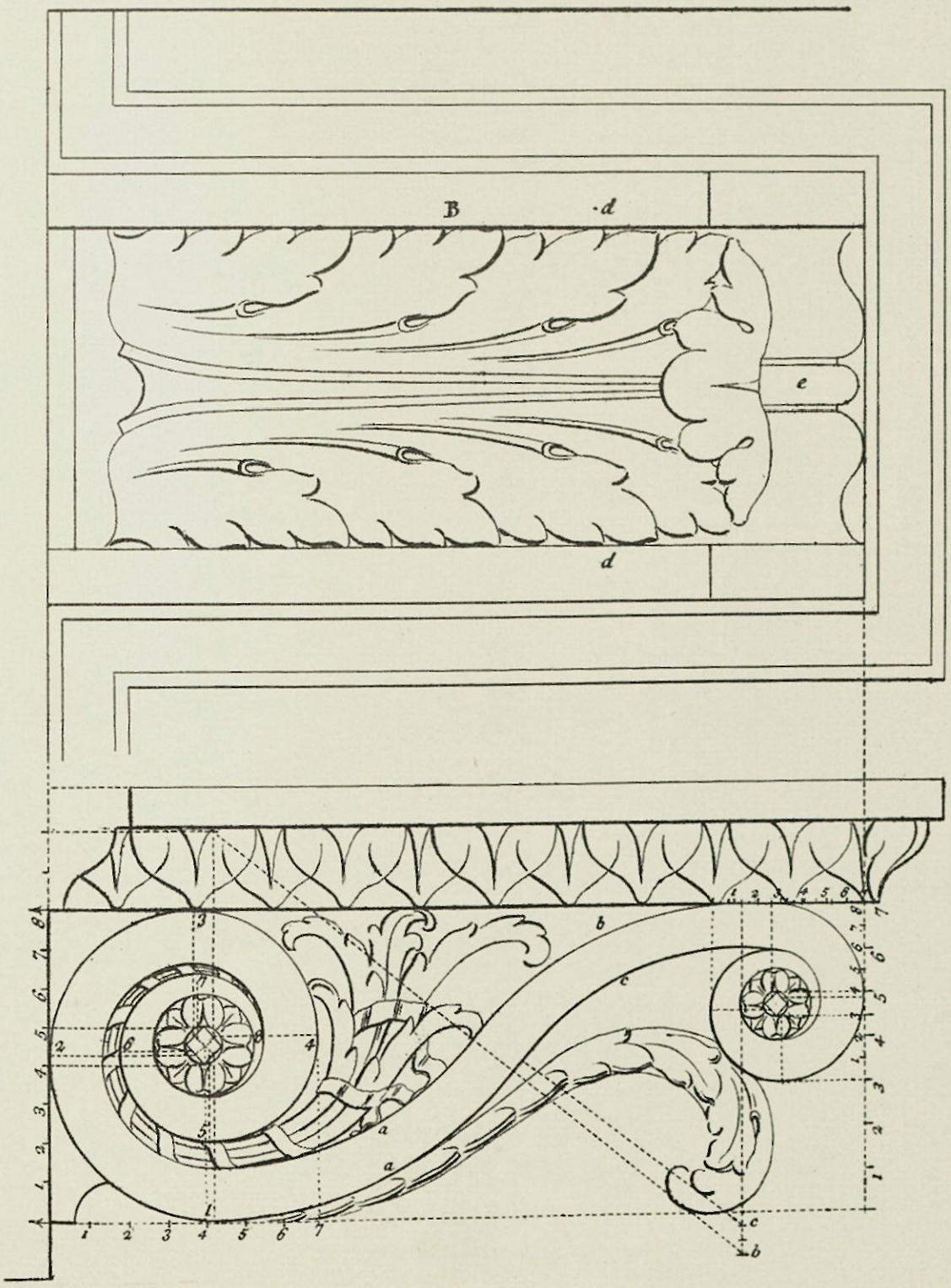




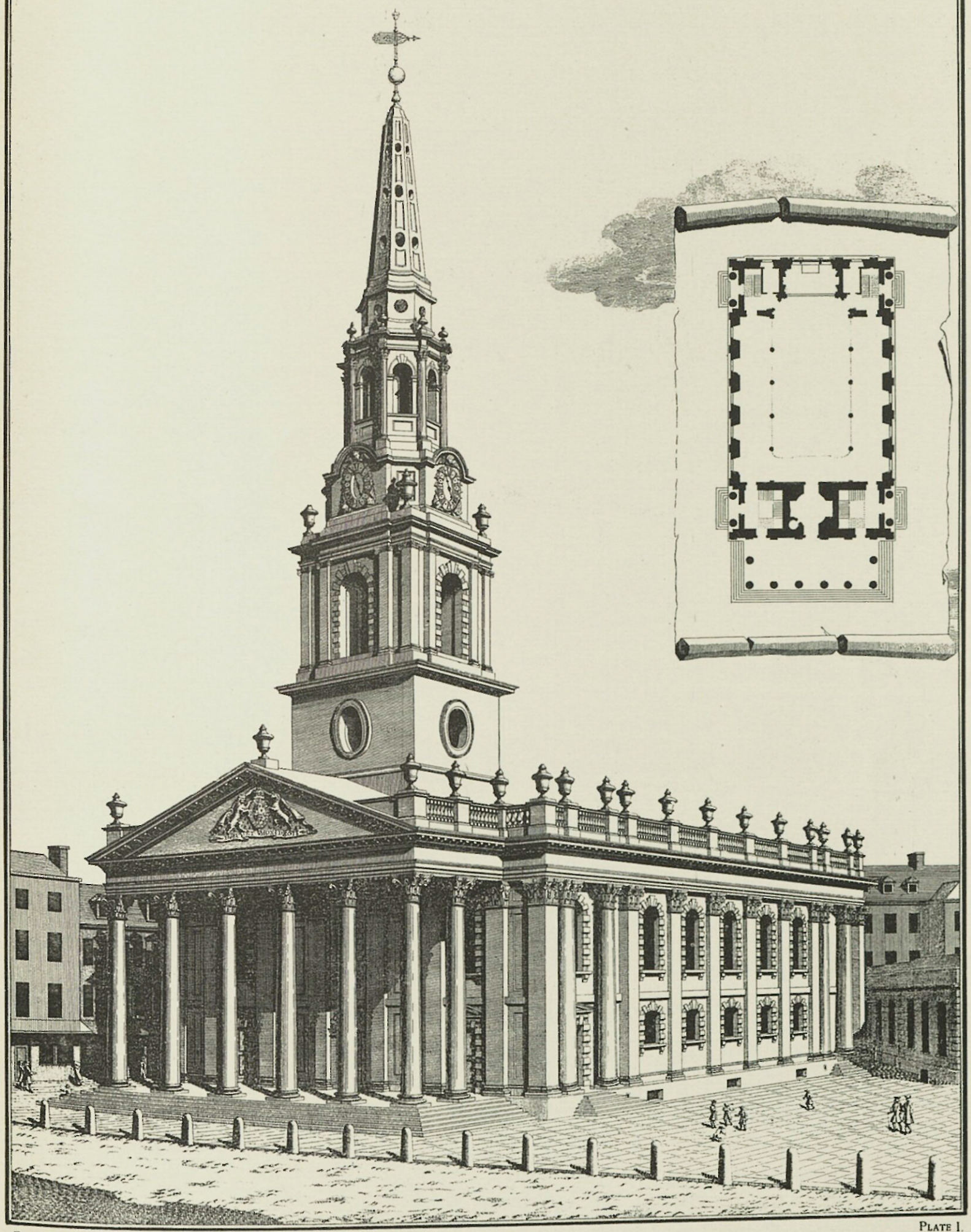








FROM GIBBS' "RULES"

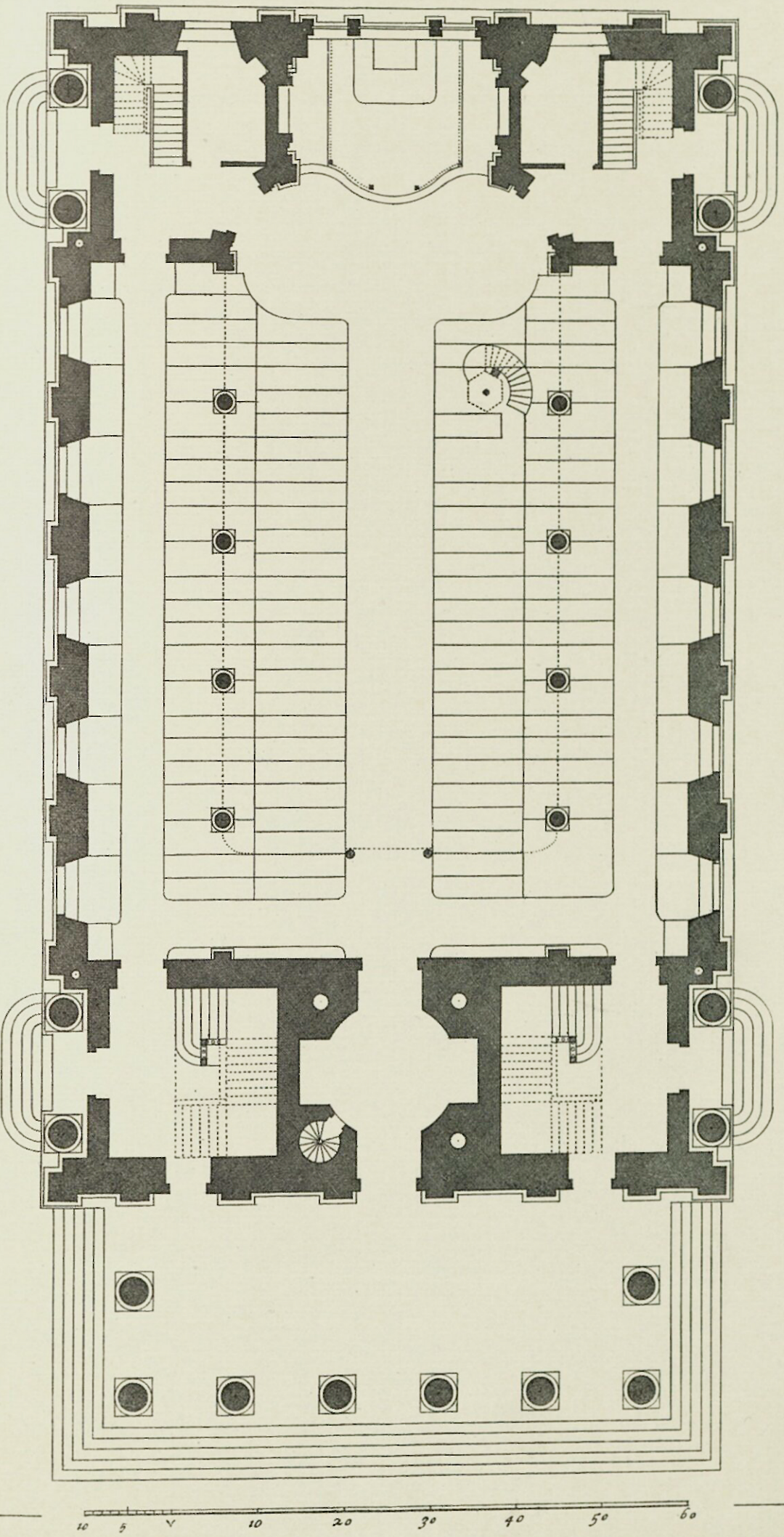


FROM GIBBS.

PLATE I.

A Perspective View of S.t Martin's Church

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.



Jacobo Gibbs Architecto.

The Plan of the Church of S.t Martin.

H:Hulsbergh Sculp.

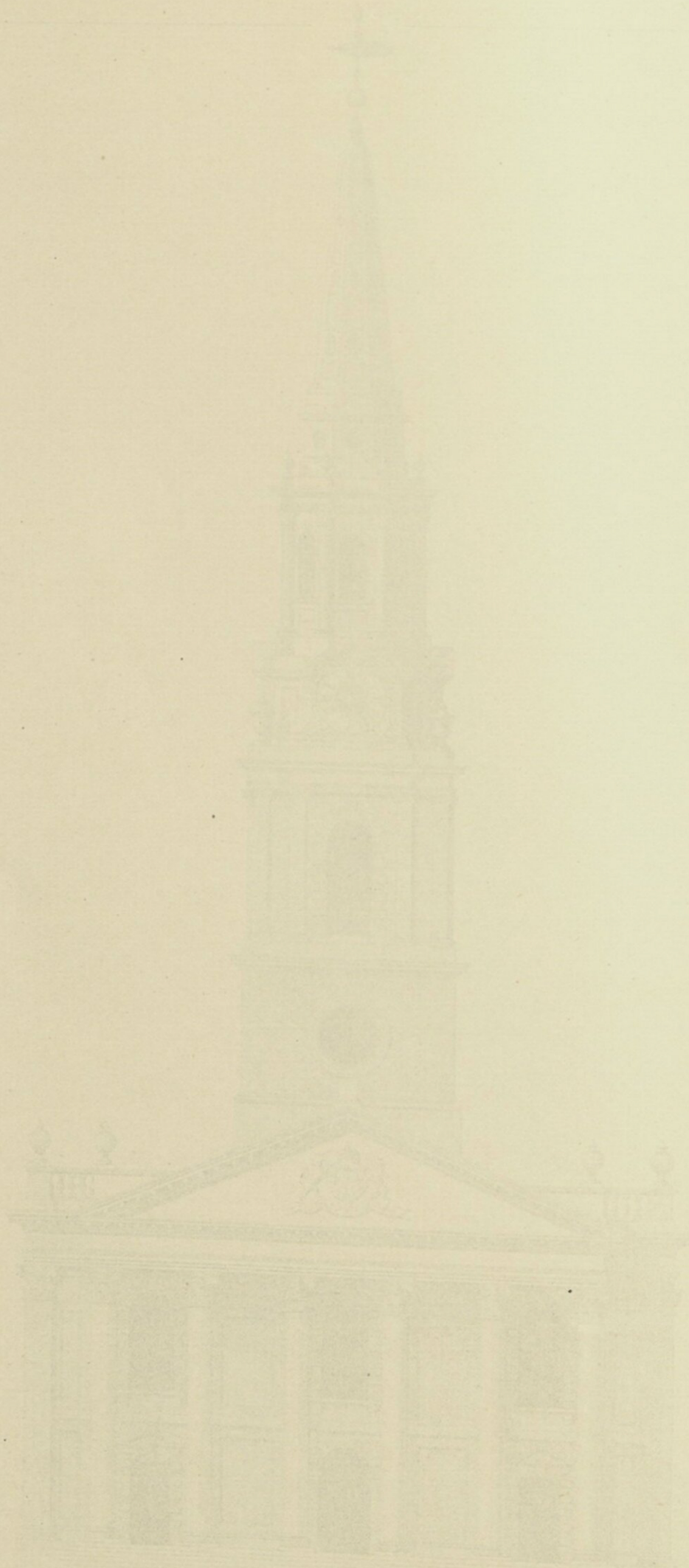
ANDREW H. GRAHAM. PHOTO LITHO WASHINGTON D.C.

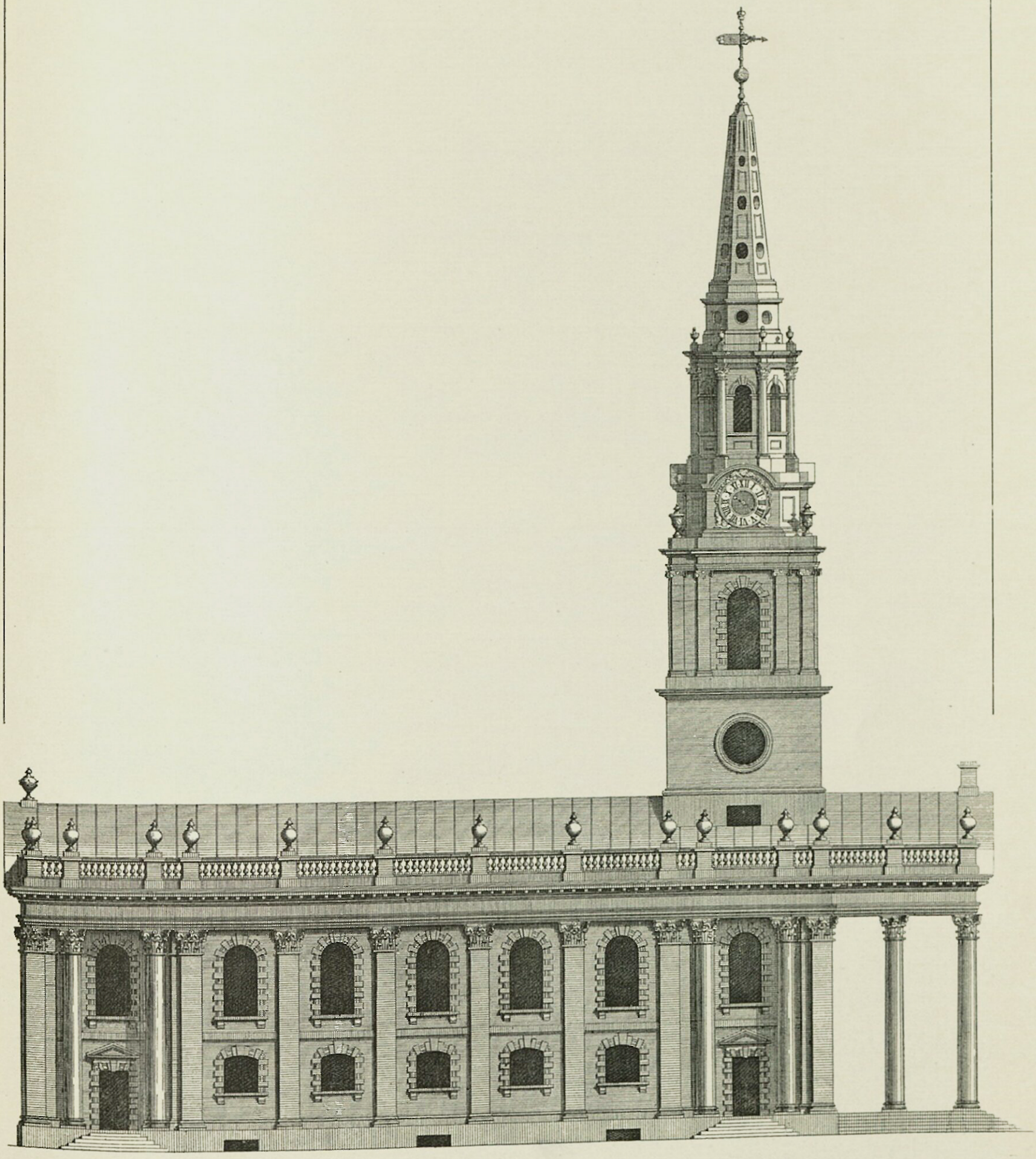
Jacobo Gibbs Architecto.

The West front of S.t Martins Church.

H Hulsbergh Sculp:

ANDREW B GRAHAM, PHOTO LITHO WASHINGTON, D.C.



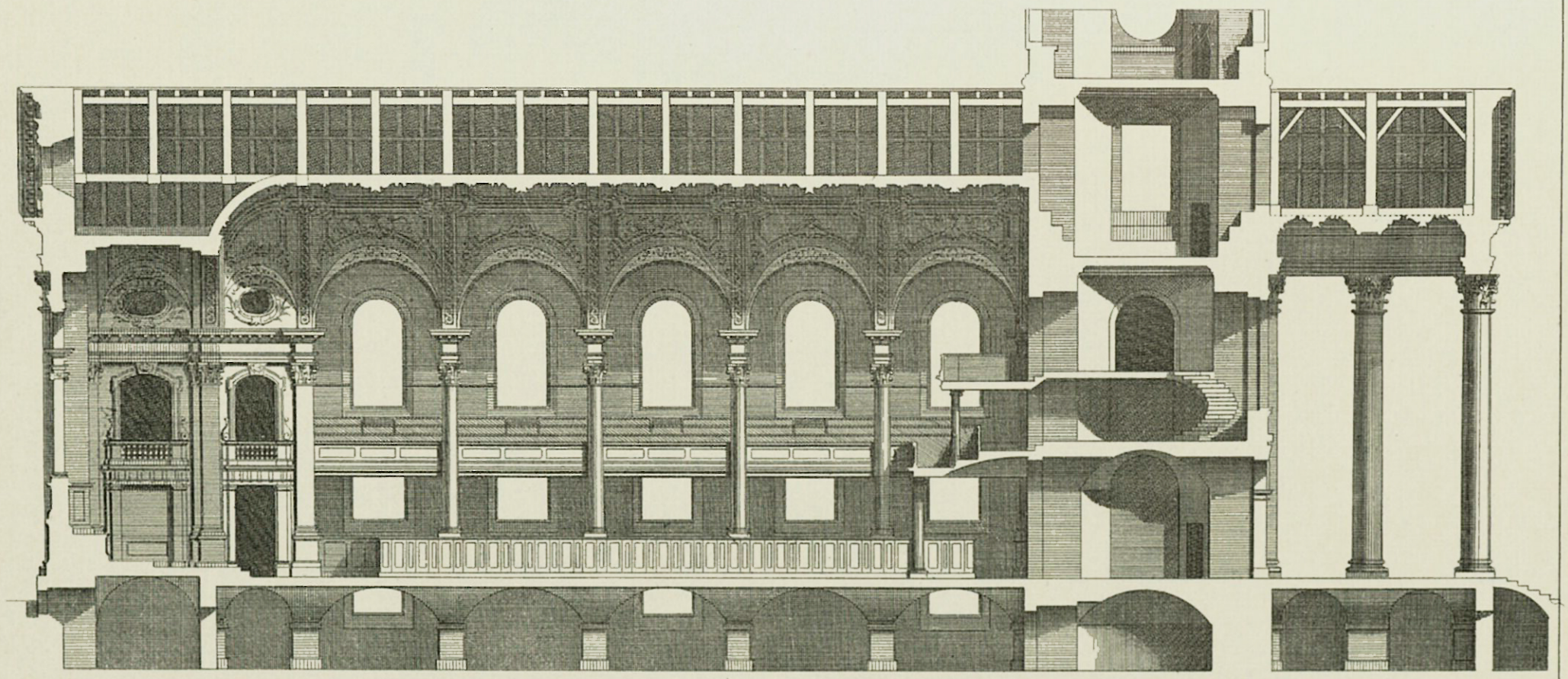


The North Side of S.t Martins Church.

Jacobe Gibbs Architecto

H. Hulsbergh Sculp.

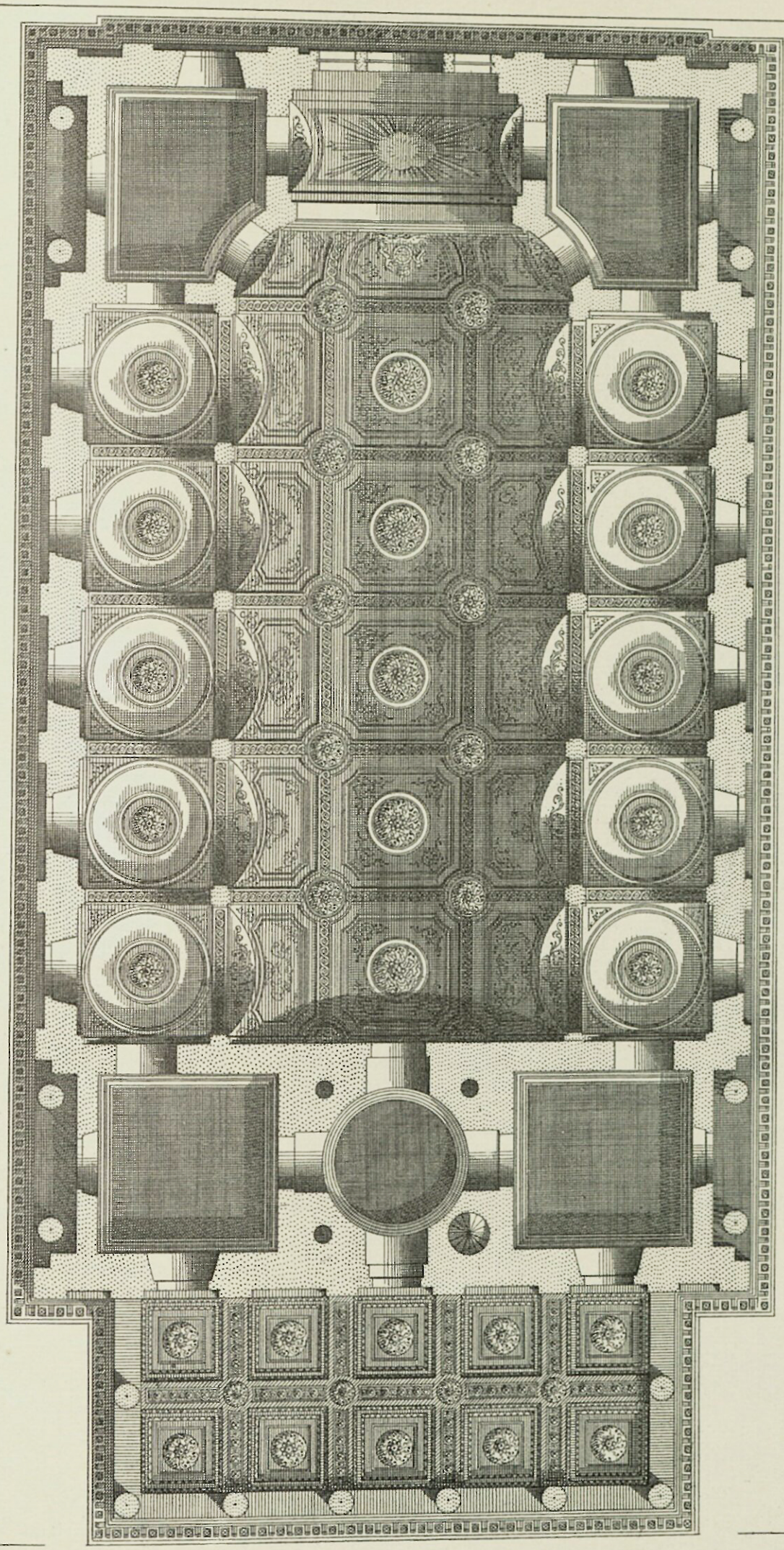
ANDREW H. GRAHAM, PHOTO-LITHO WASHINGTON, D.C.



The Section from East to West of St. Martins Church

Jacobo Gibbs Architecto. *H. Hulsbergh Sculp*

ANDREW B GRAHAM PHOTO LITHO WASHINGTON D.C.



The Ceiling of the New Church of S^t. Martin

Jacobo Gibbs Architecto.

H. Hulsbergh Sculp:

ANDREW B GRAHAM PHOTO LITHO WASHINGTON D.C.

Jacobo Gibbs Architecto.

From James Gibbs.

E. Kirkall sculp

ANDREW B GRAHAM PHOTO-LITHO WASHINGTON, D.C.

Jacobo Gibbs Architecto.

FROM JAMES GIBBS

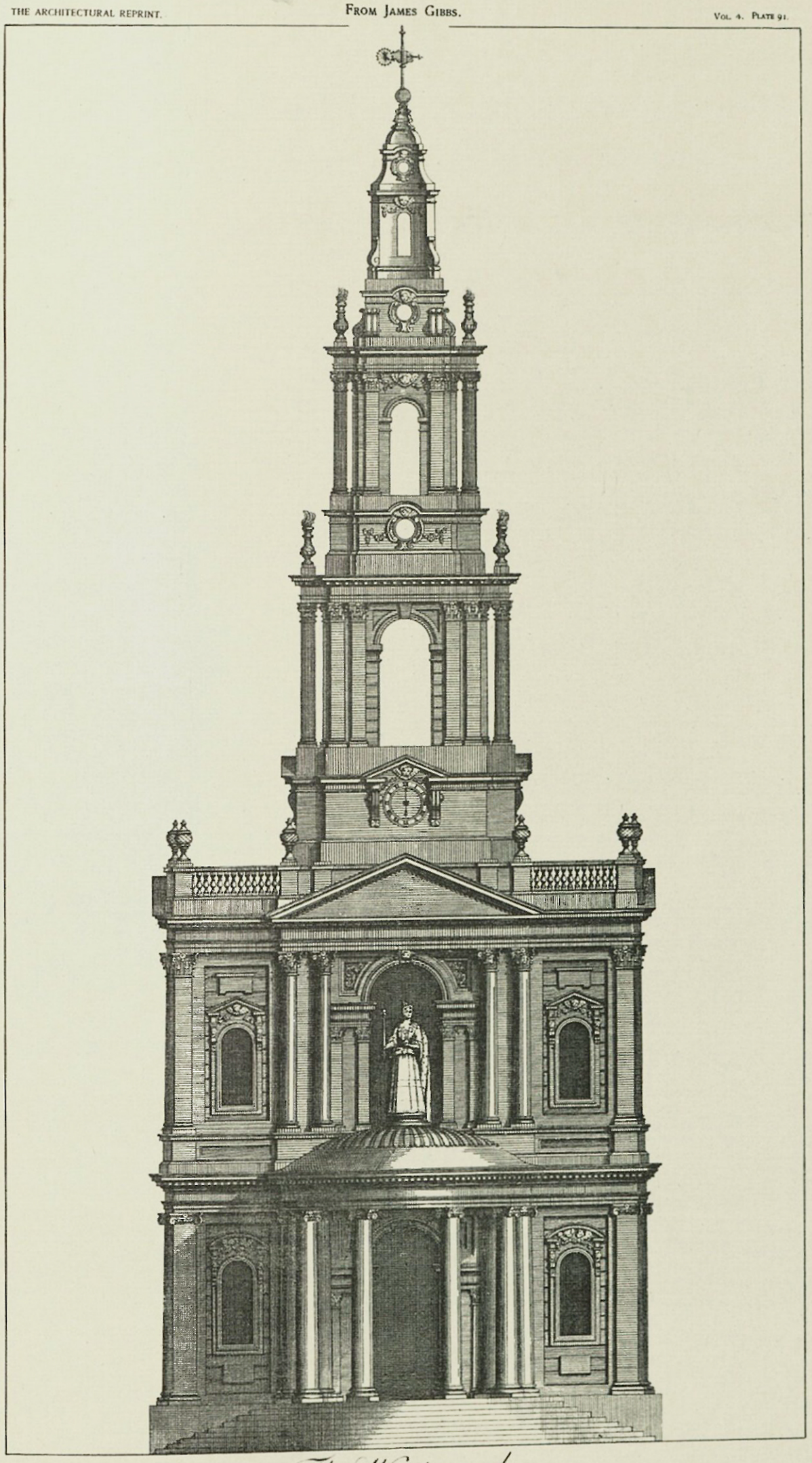
E. Kirkall sculp.

ANDREW B GRAHAM PHOTO-LITHO WASHINGTON, D.C.

Jacobo Gibbs Architecto *H. Hulsbergh Sculp*

From James Gibbs.

ANDREW B. GRAHAM, PHOTO-LITHO WASHINGTON D.C.

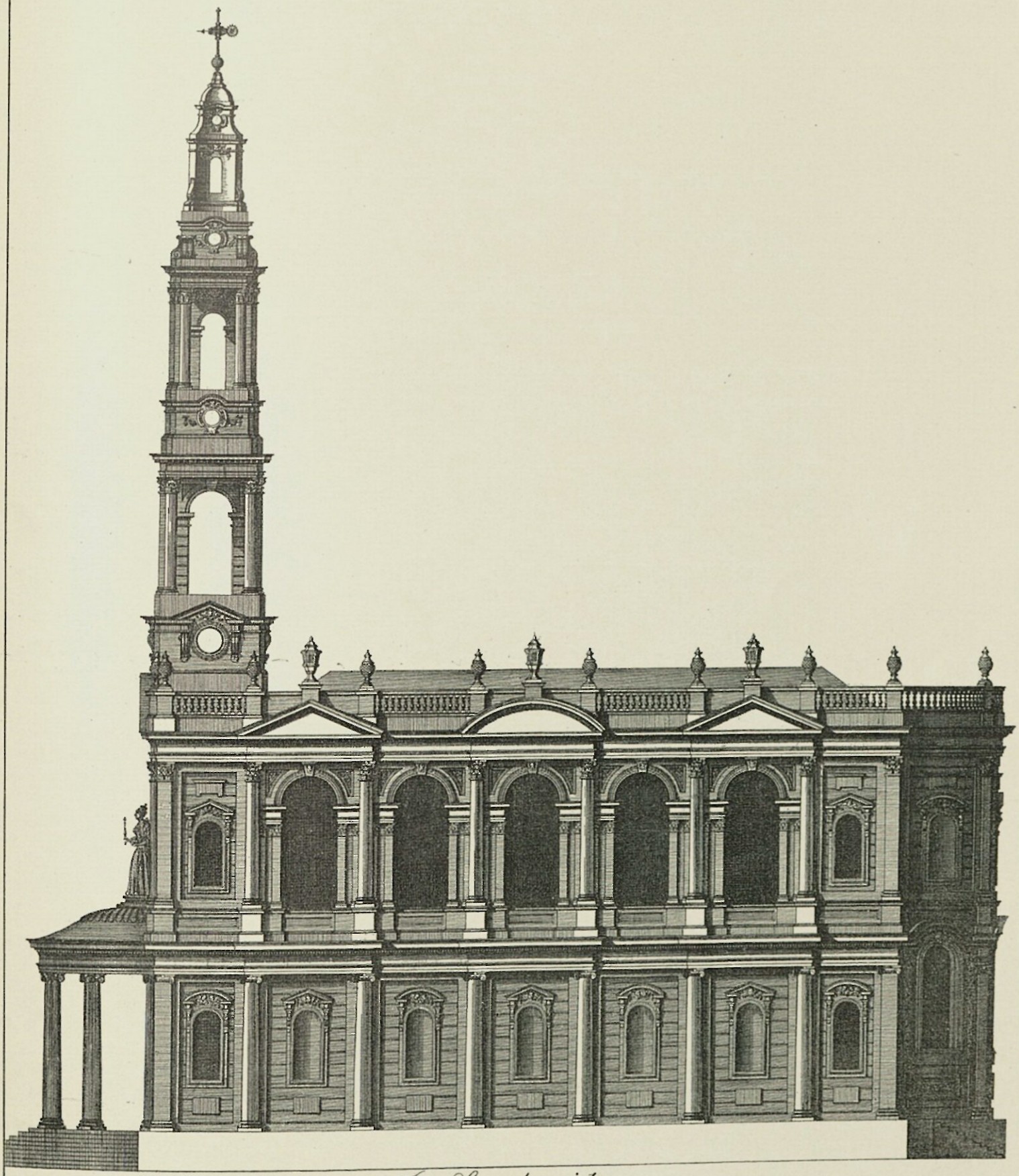


The West-end

Ja. Gibbs Arch. del.

H. Hulsberg Sculpt.

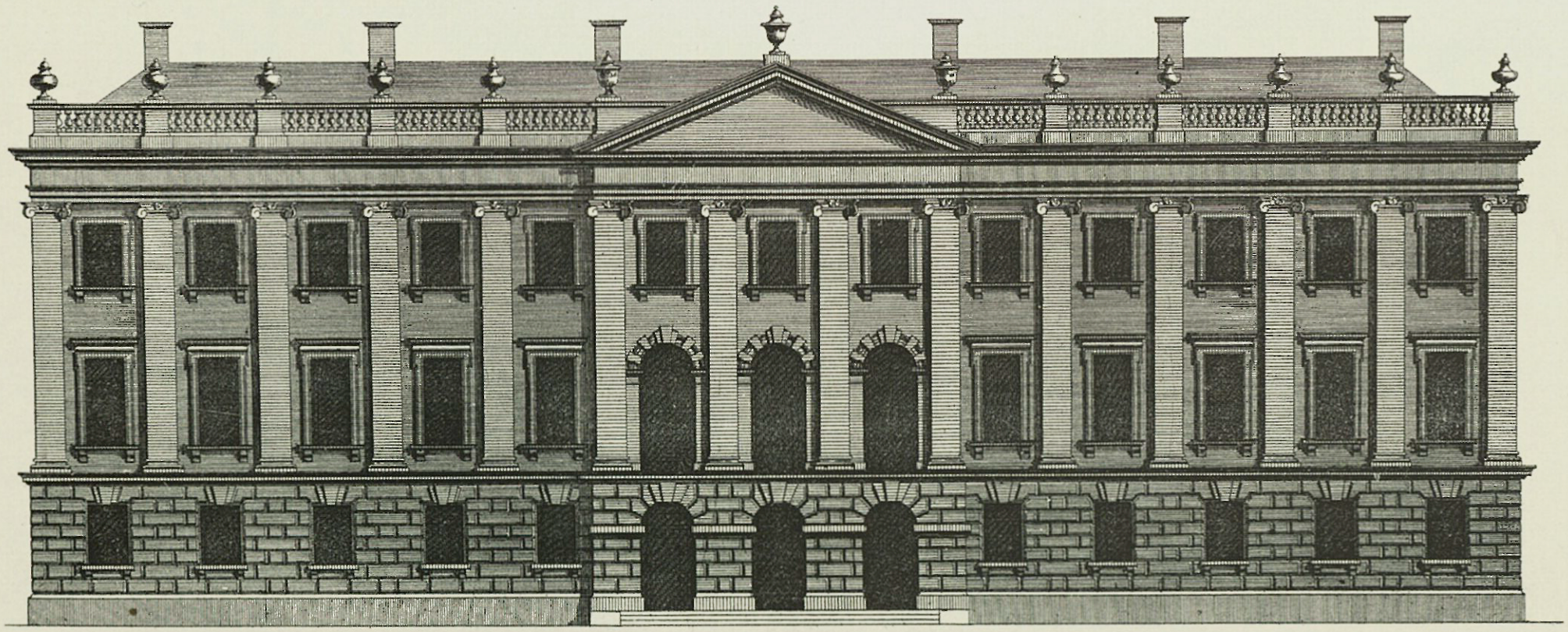
ANDREW B. GRAHAM PHOTO-LITHO WASHINGTON, D.C.



The South side.

Arch. del. *I. Harris sculp.*

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.



10 5 10 20 30 40 50 60 70

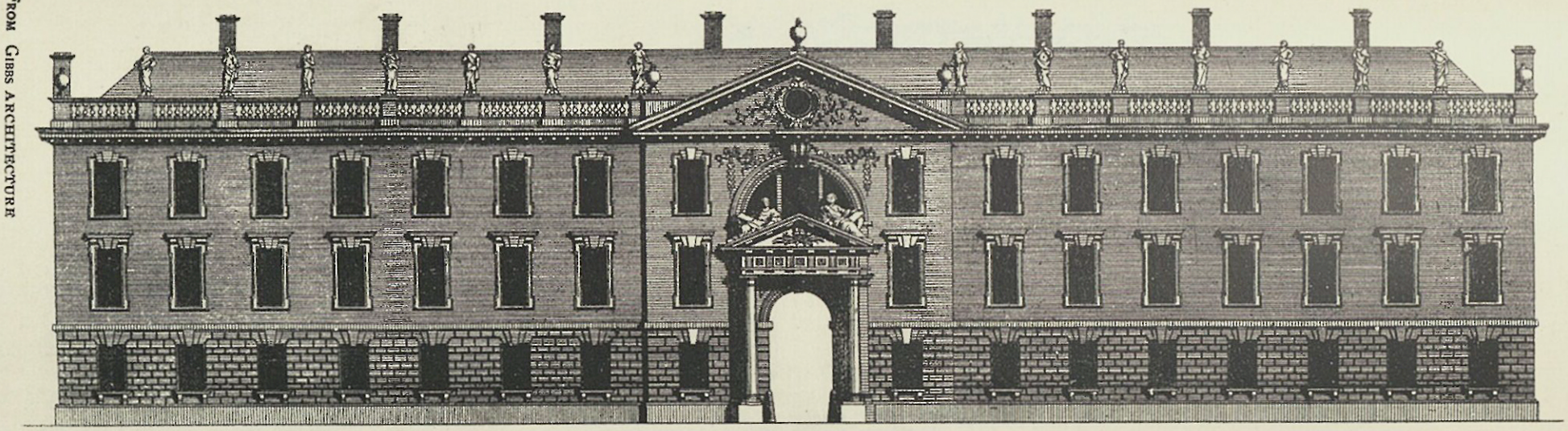
Iacobo Gibbs Architecto.

E. Kirkall sculp.

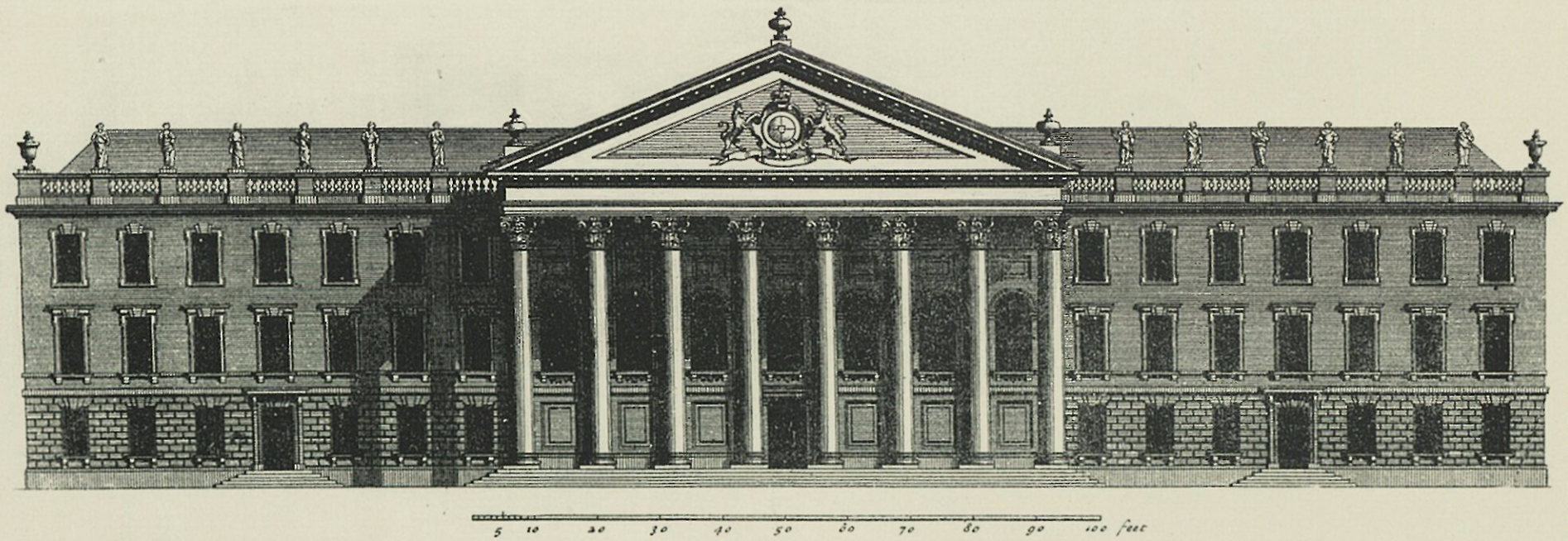
THE ARCHITECTURAL REPRINT.

Vol. 4 Plate 59.

ANDREW B. GRAHAM PHOTO-LITHO WASHINGTON, D.C.



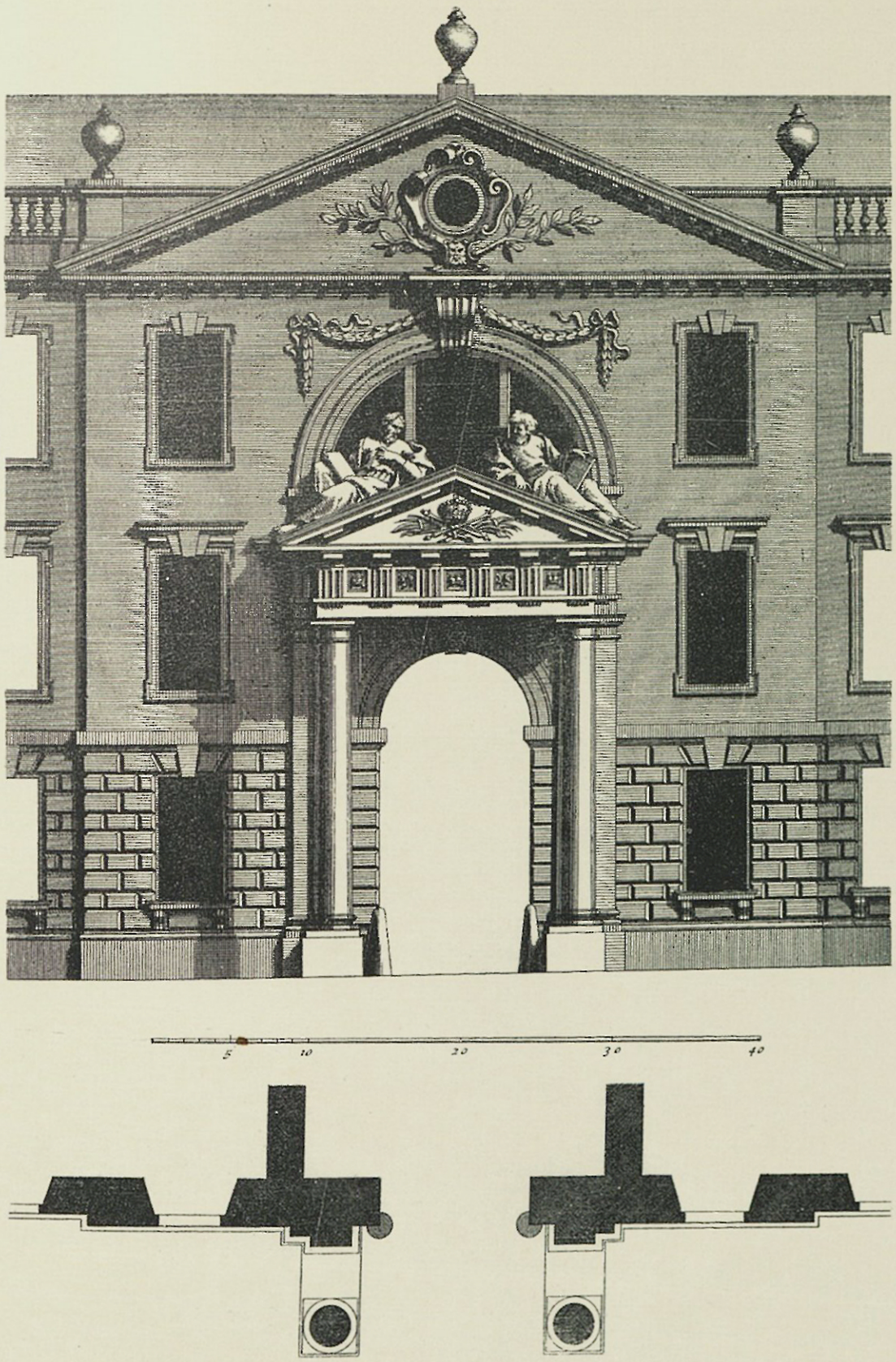
The West Side fronting the River.



The upright of the South Side of Kings College fronting the Chapel.

Jacobo Gibbs Architecto.

H. Hulsbergh Sculp.

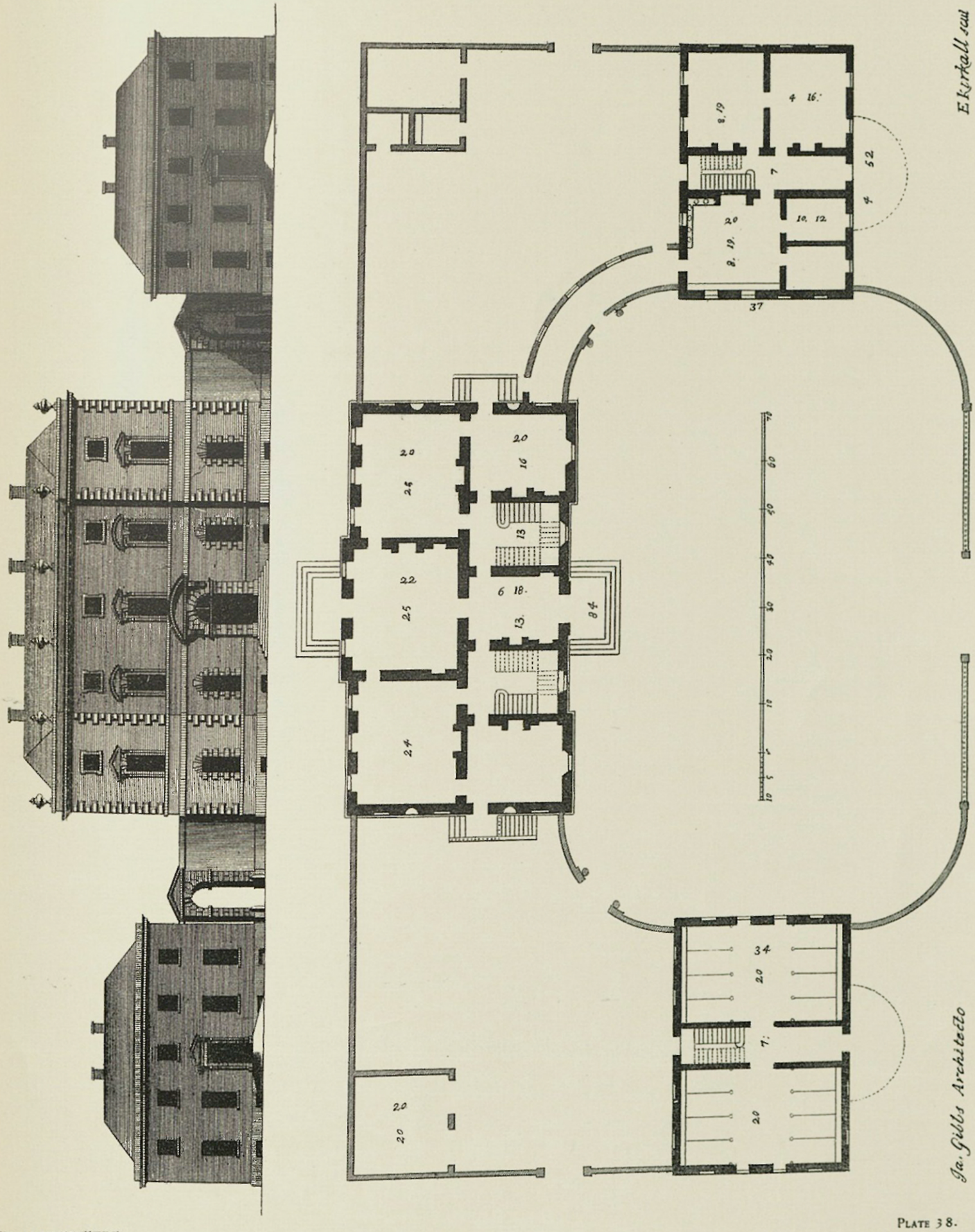


The middle parte of the West Side upon a larger Scale

Iacobo Gibbs Architecto *H:Hulsbergh Sculp*

FROM GIBBS ARCHITECTURE PLATE 34.

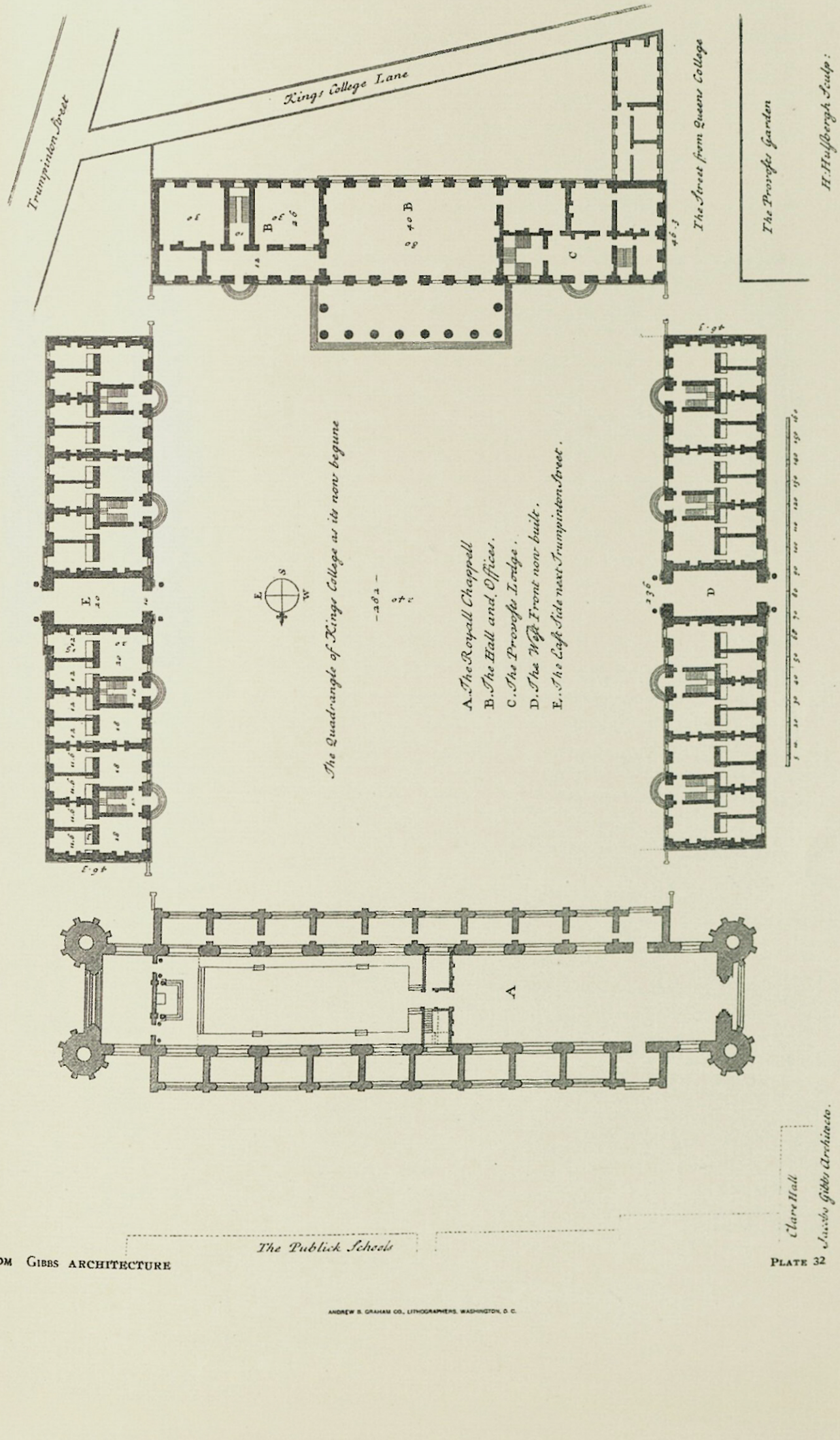
ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.



FROM GIBBS ARCHITECTURE.

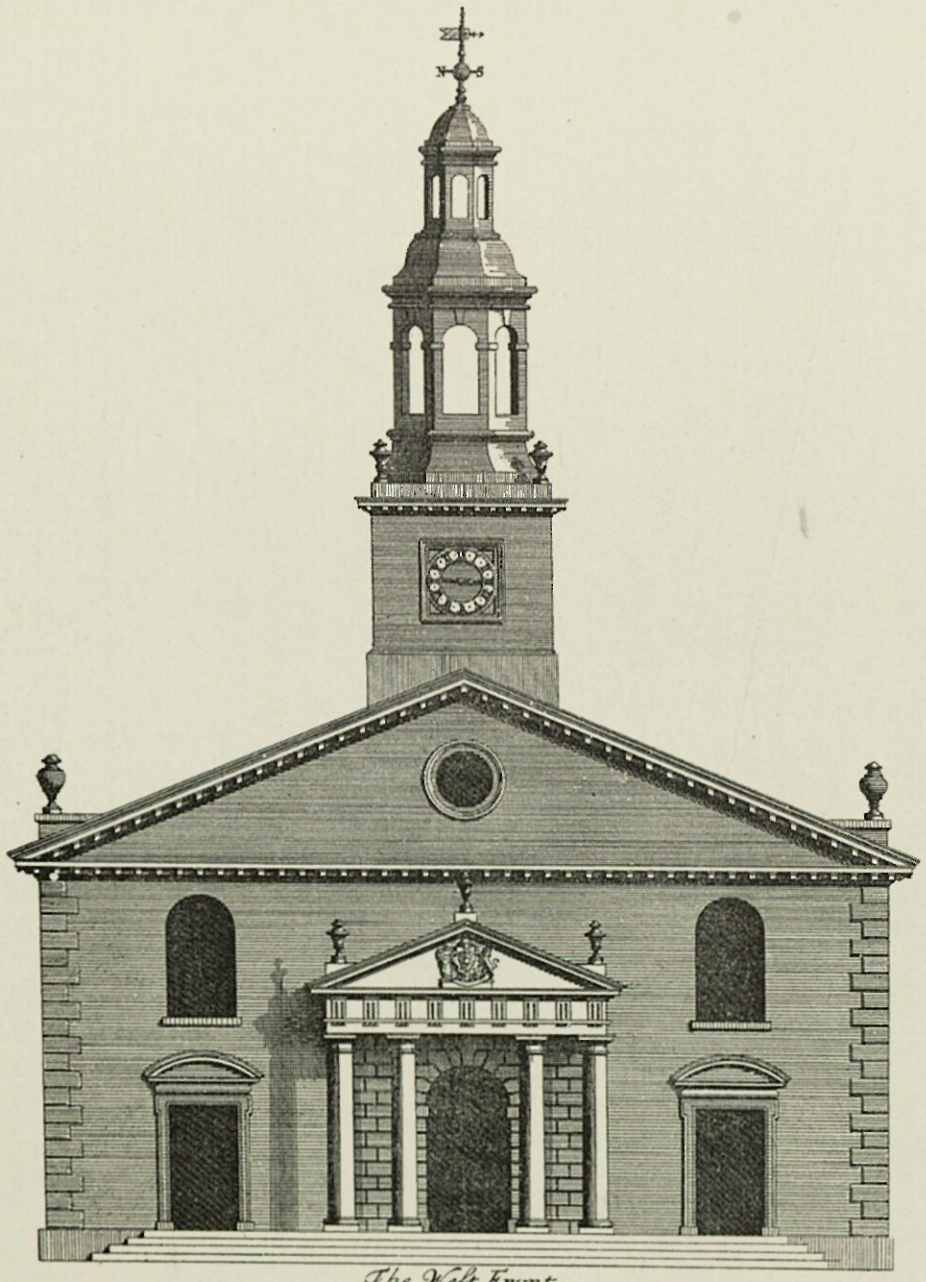
PLATE 38.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.

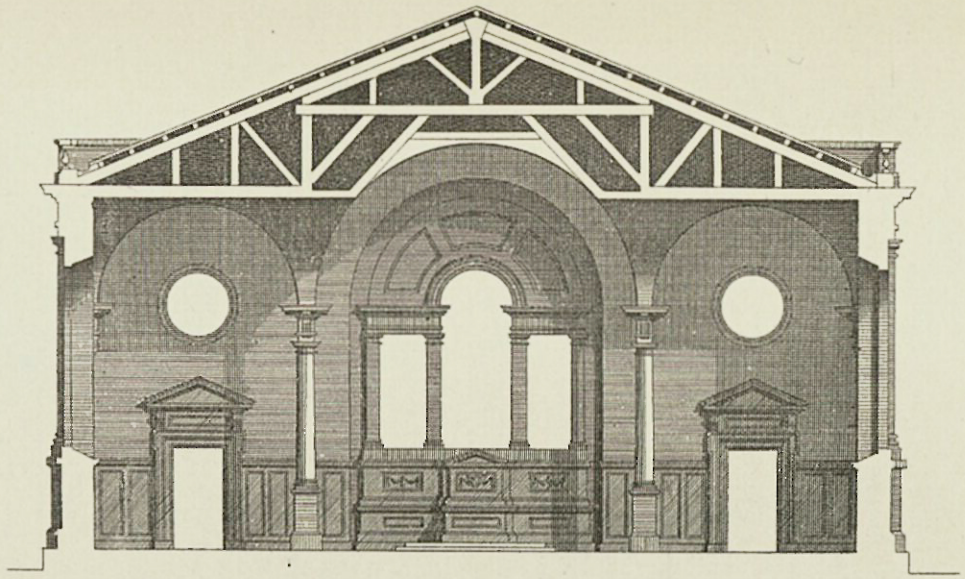


FROM GIBBS ARCHITECTURE PLATE 32

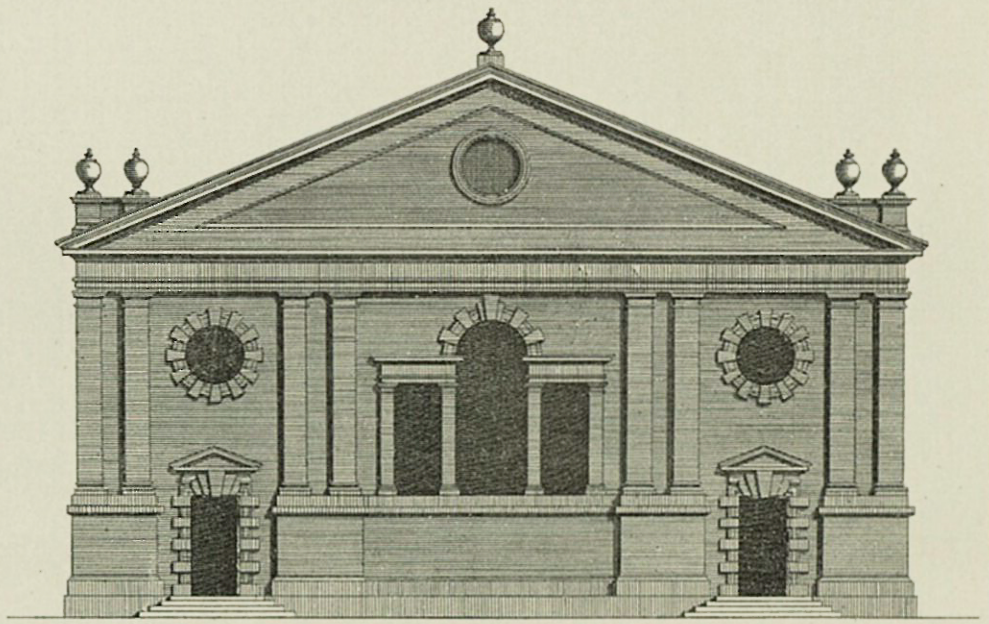
ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.



The West Front

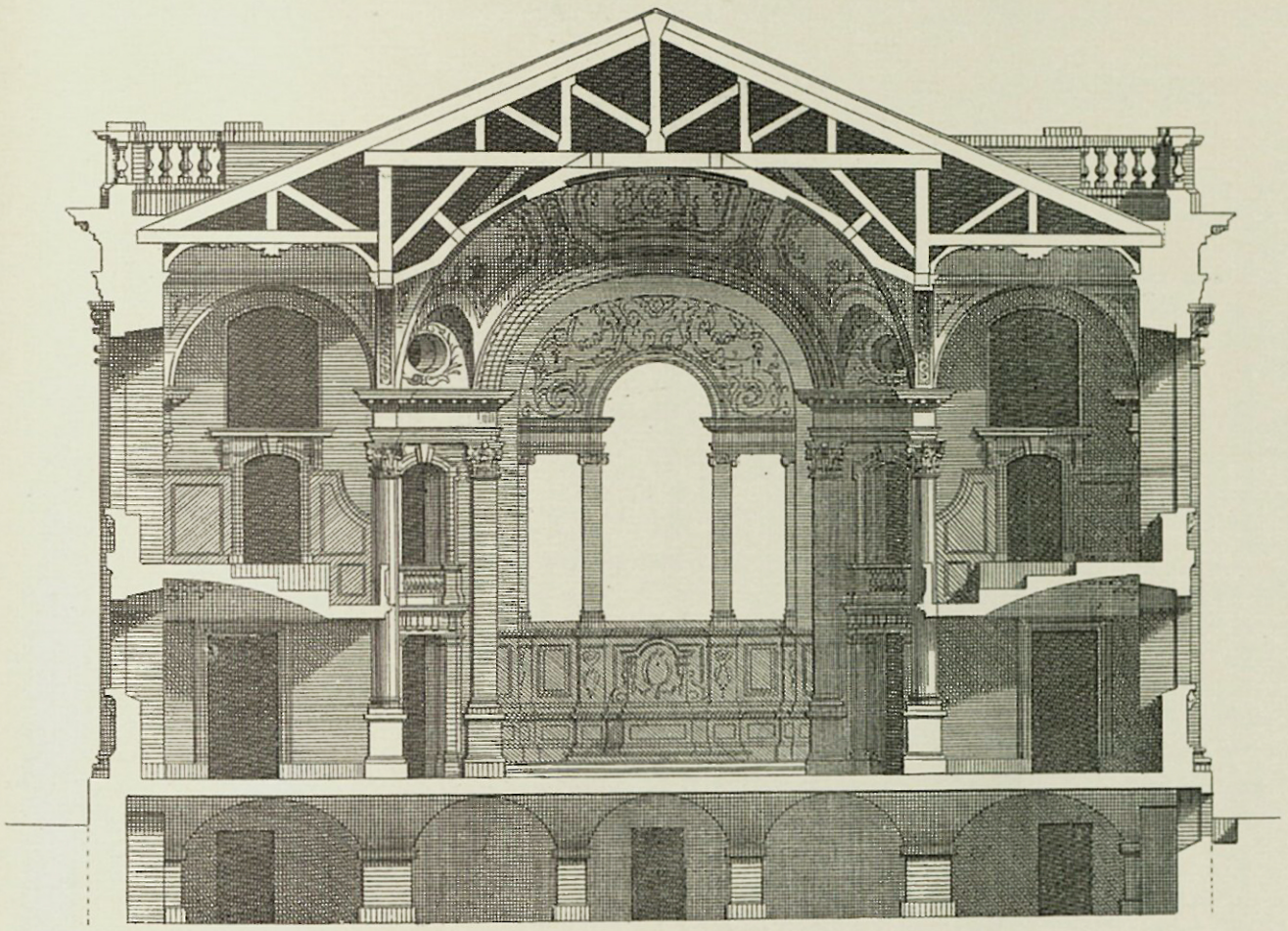


The Section.

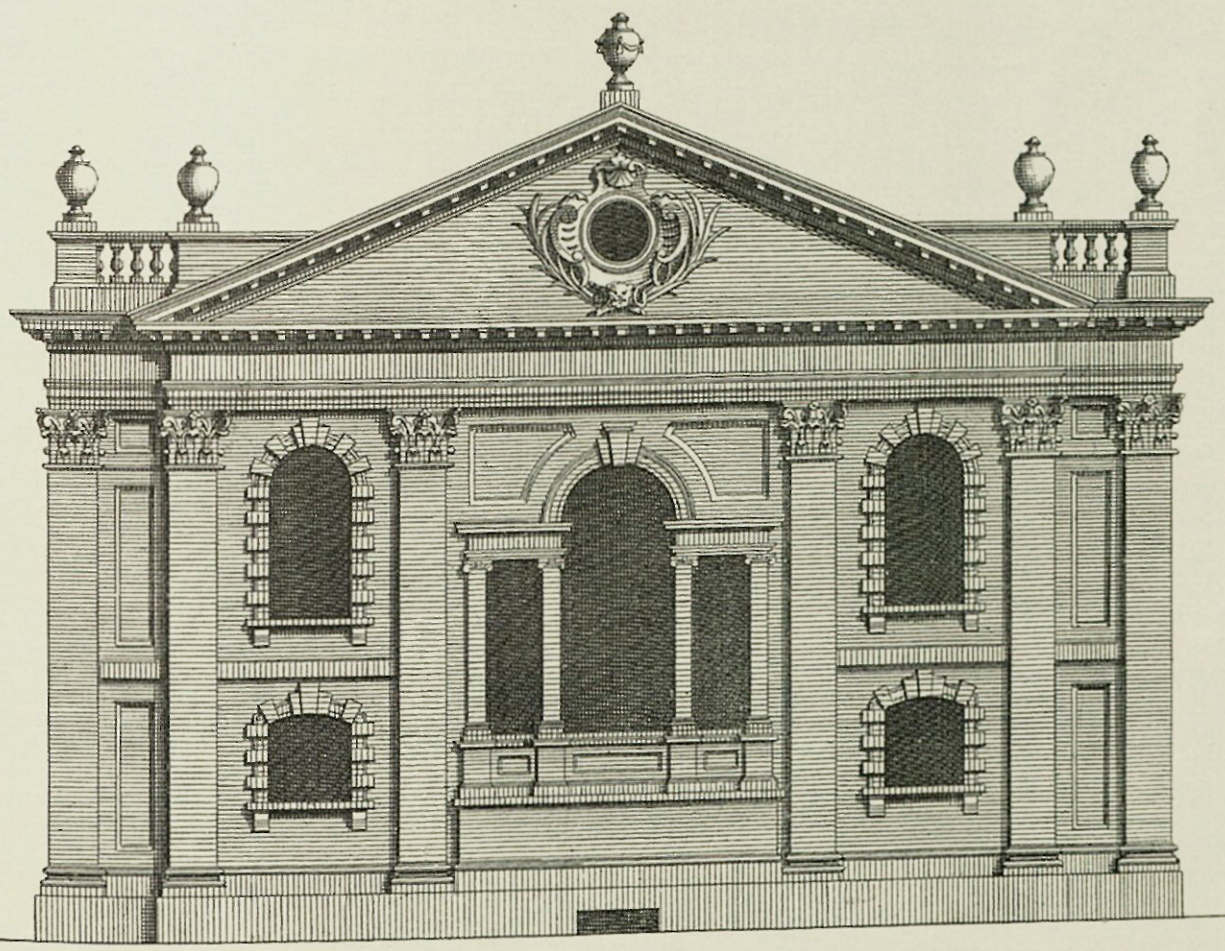


The East end of the New Church att Derby

From Gibbs.



Section from South to North

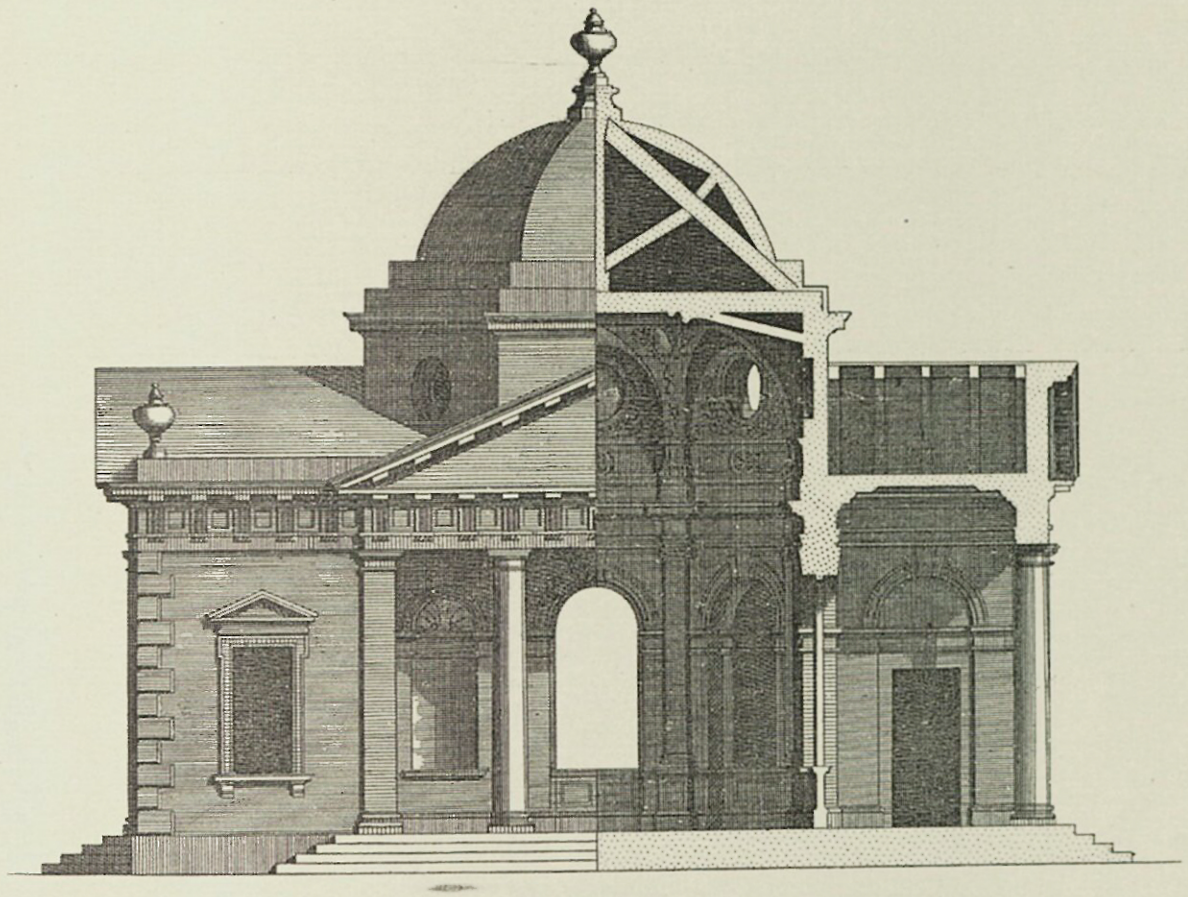


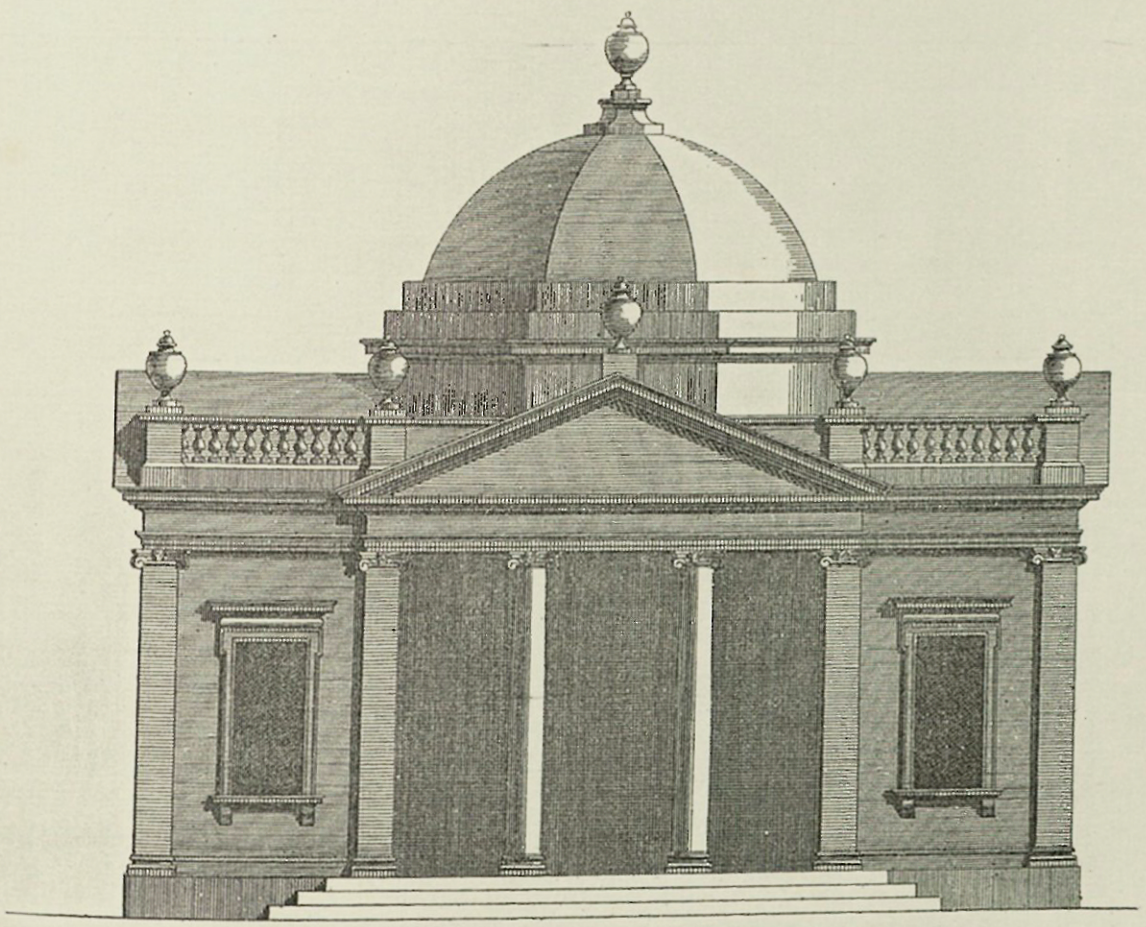
Jacobo Gibbs Architecto

The East End

H. Hulsbergh Sculp:

ANDREW B GRAHAM PHOTO LITHO WASHINGTON D.C.

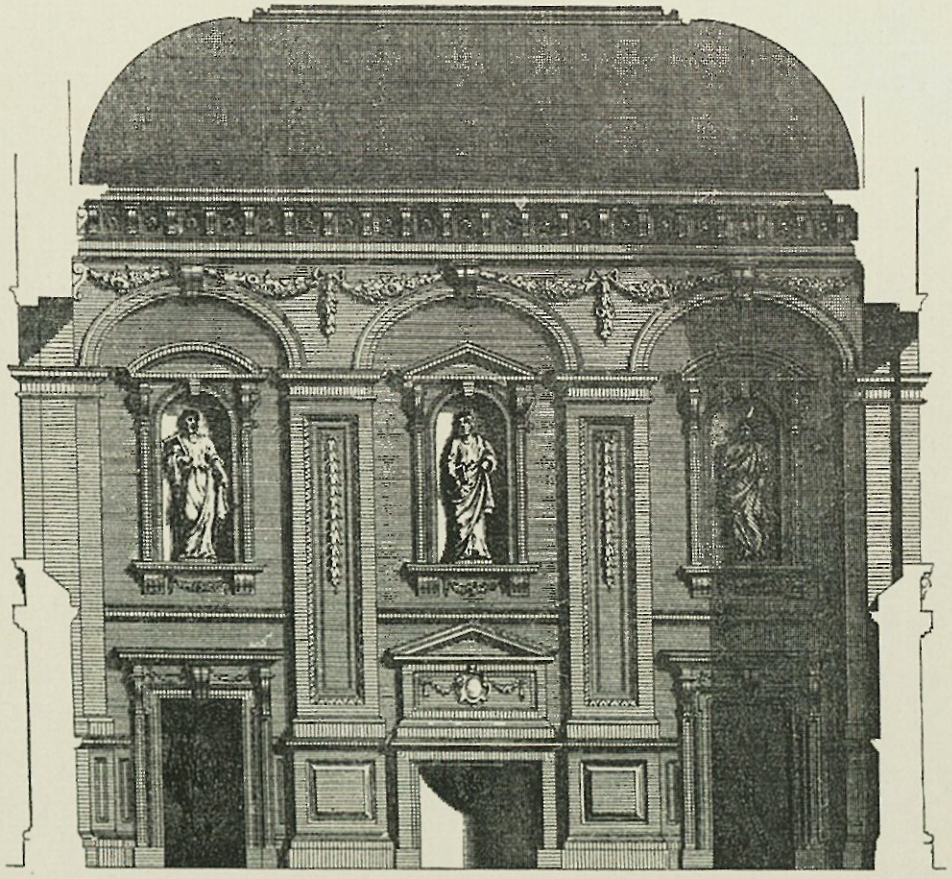




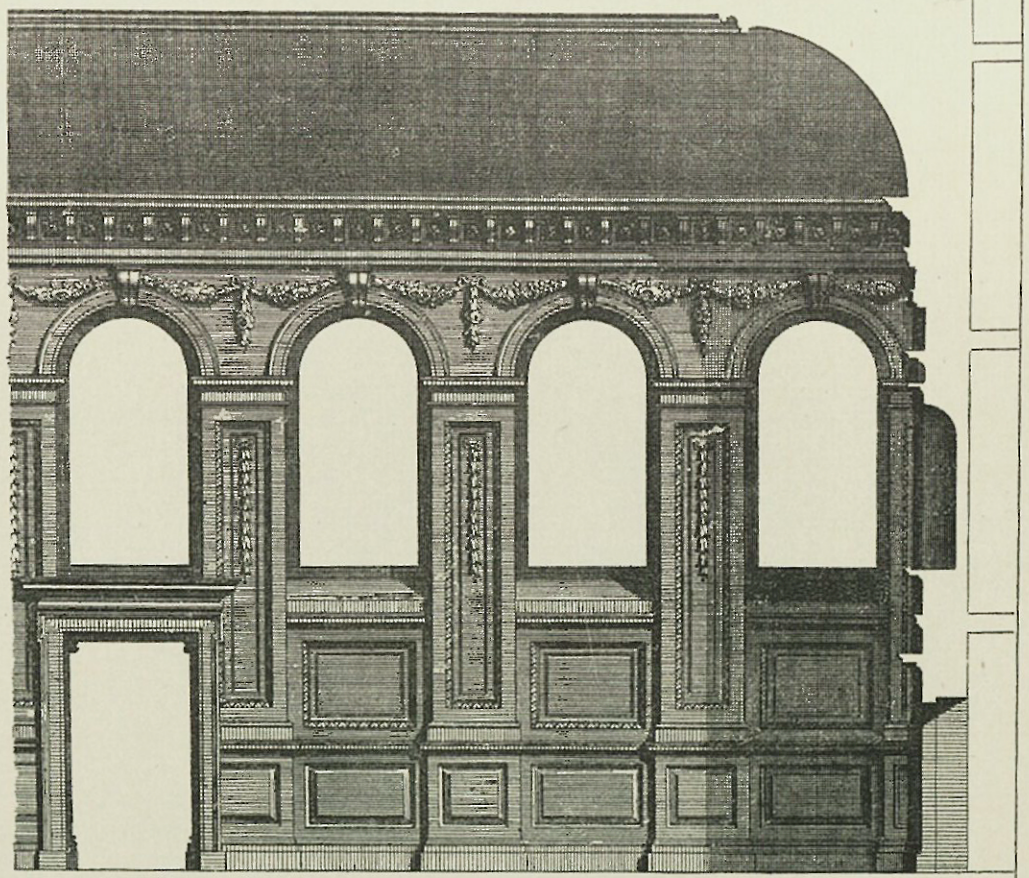
FROM GIBBS.

PLATES 67 and 83.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.



The Section for the end of the Hall.

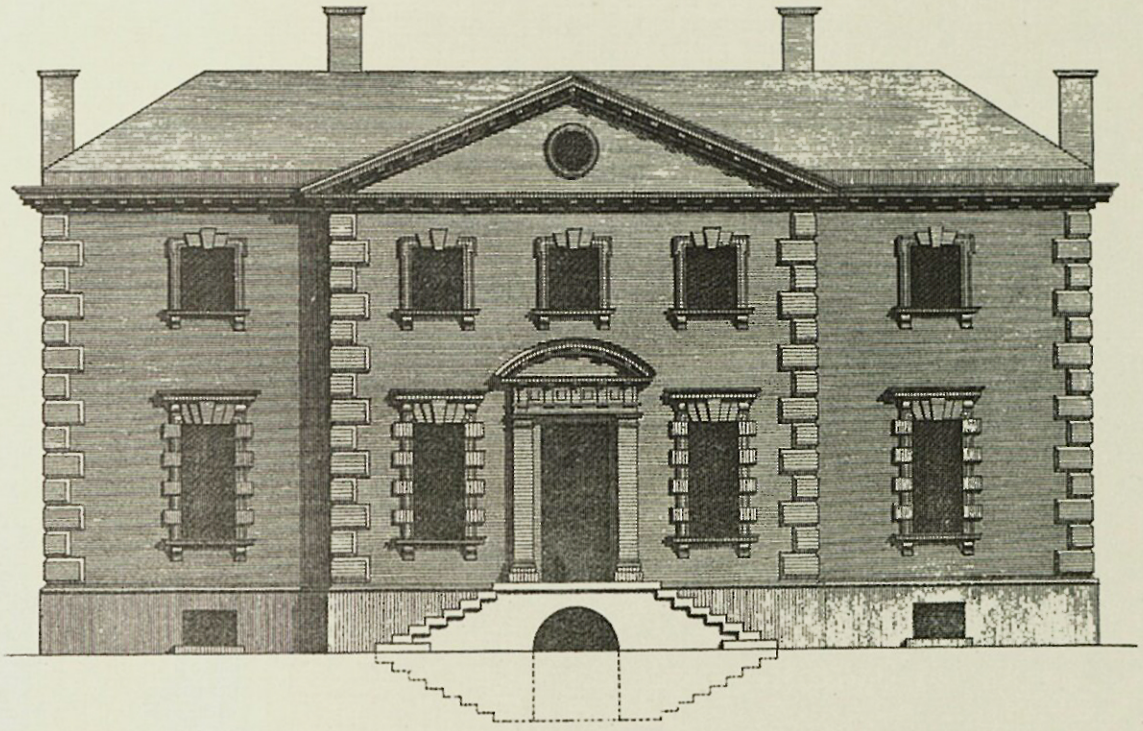


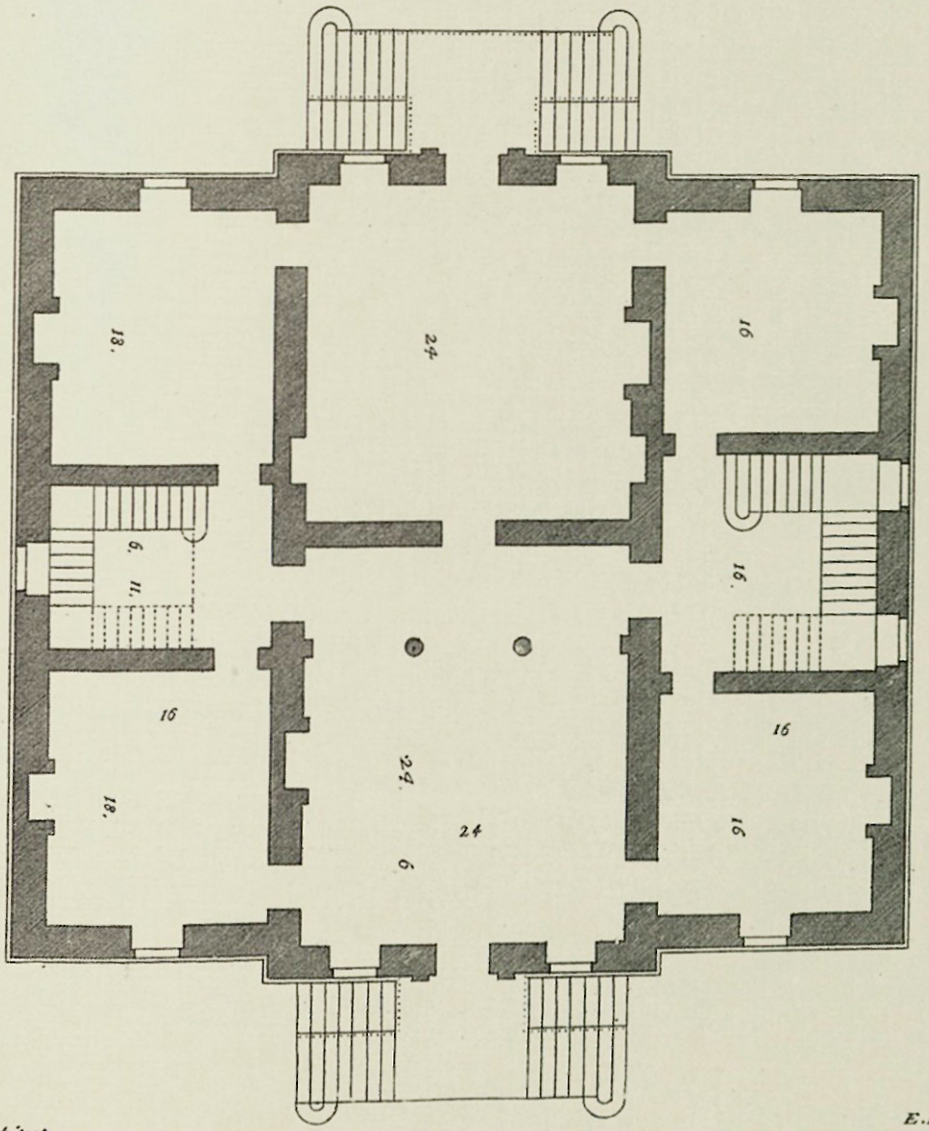
The halfe of the Section of the Hall of Kings College longe wise

Iacobo Gibbs Architecto — FROM JAMES GIBBS. — *H: Hulsbergh Sculp*

ANDREW B. GRAHAM PHOTO LITHO WASHINGTON, D.C.

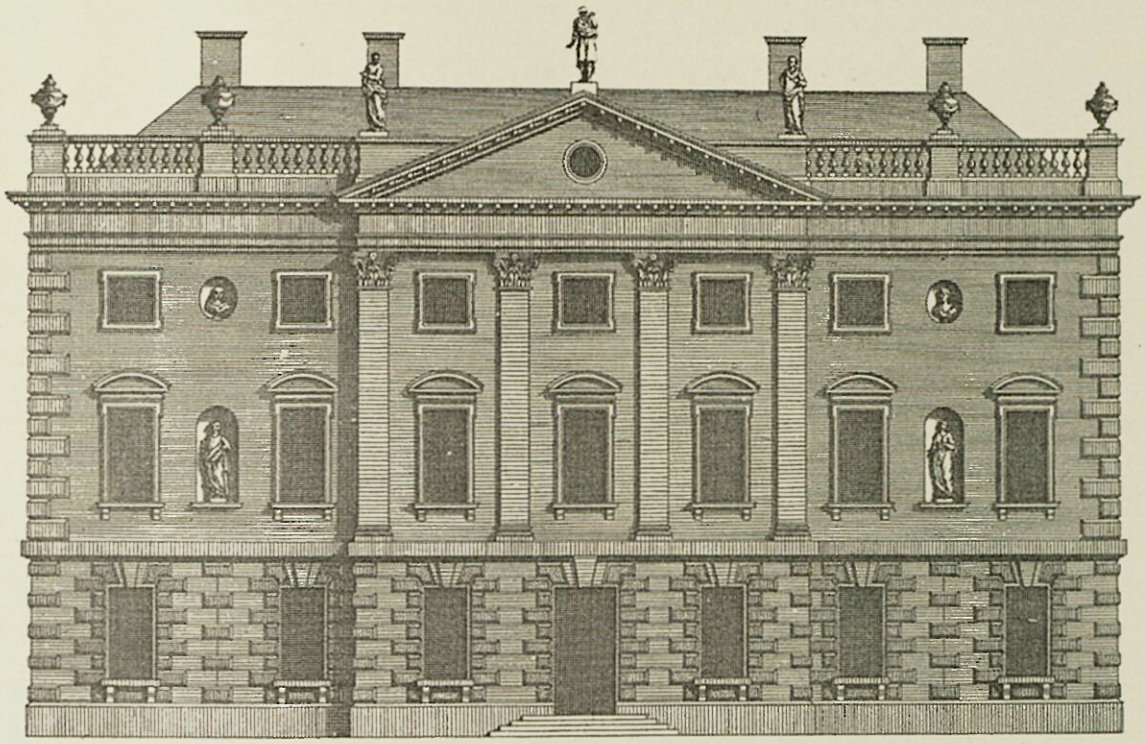
p.65

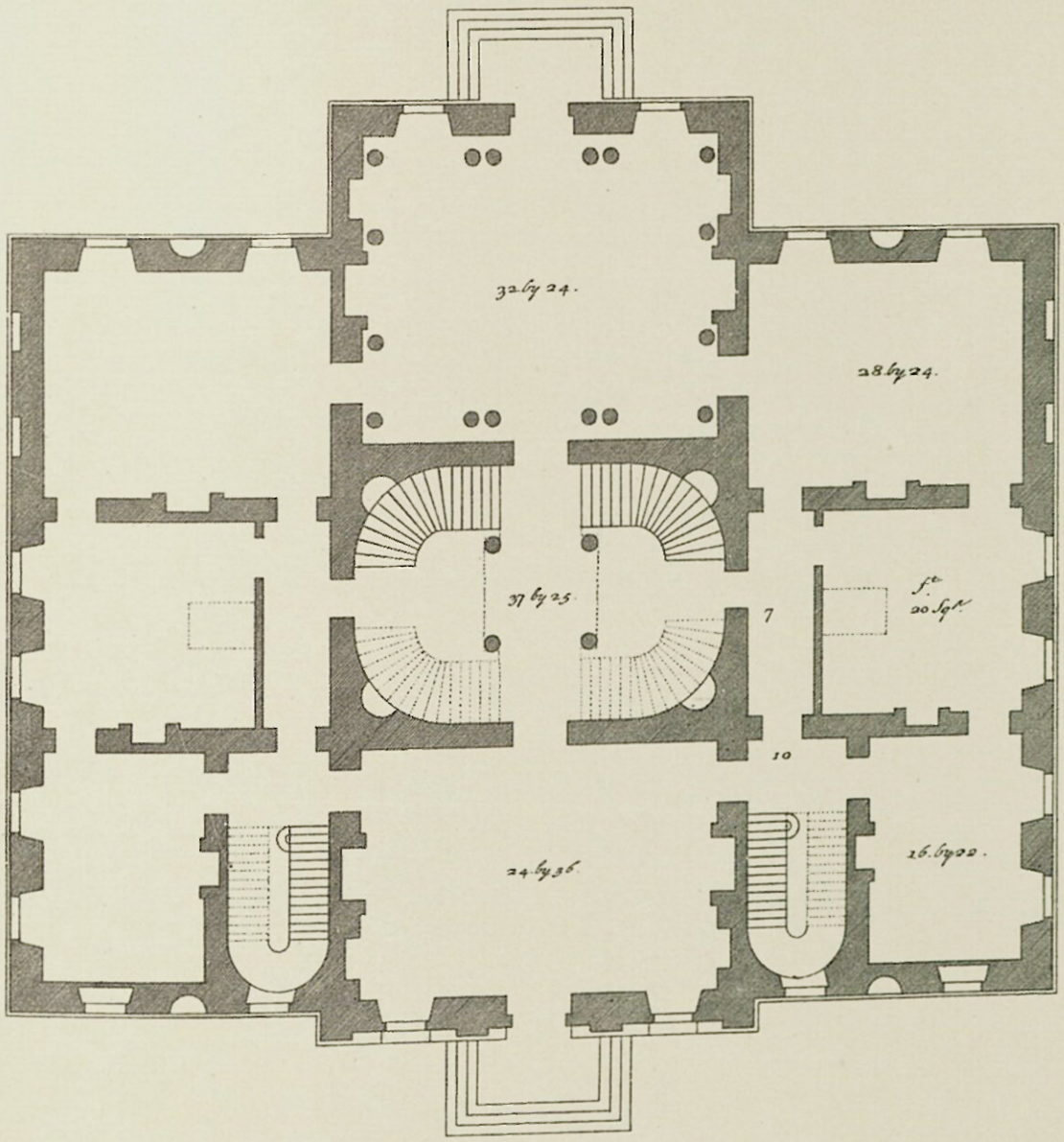




Jacobo Gibs Architecto. E. Kirkall sc.

ANDREW B GRAHAM PHOTO LITHO WASHINGTON D C





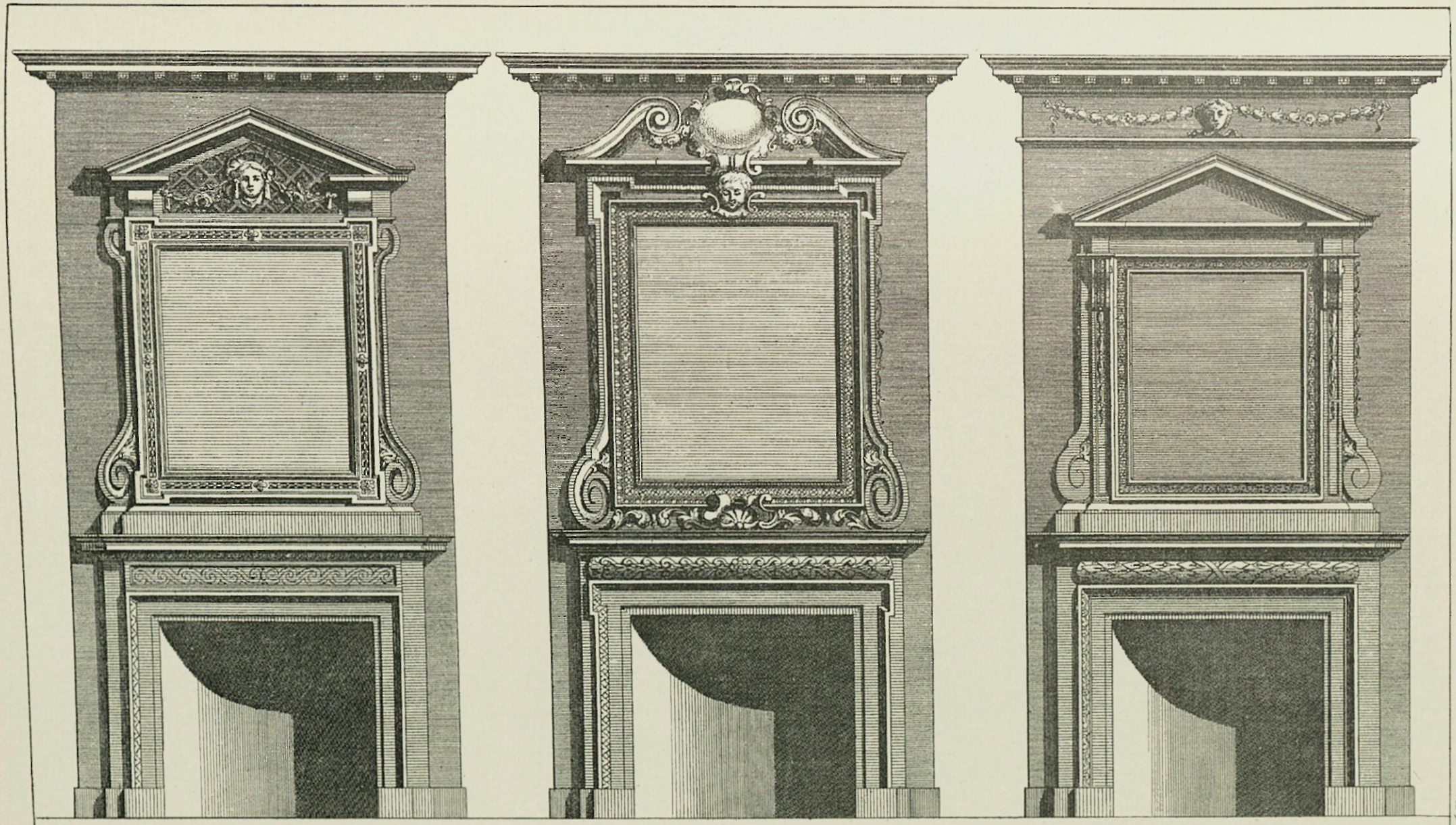
Jacobo Gibbs Architecto.

I Harris faul.

FROM JAMES GIBBS.

ANDREW B GRAHAM PHOTO LITHO WASHINGTON D.C.

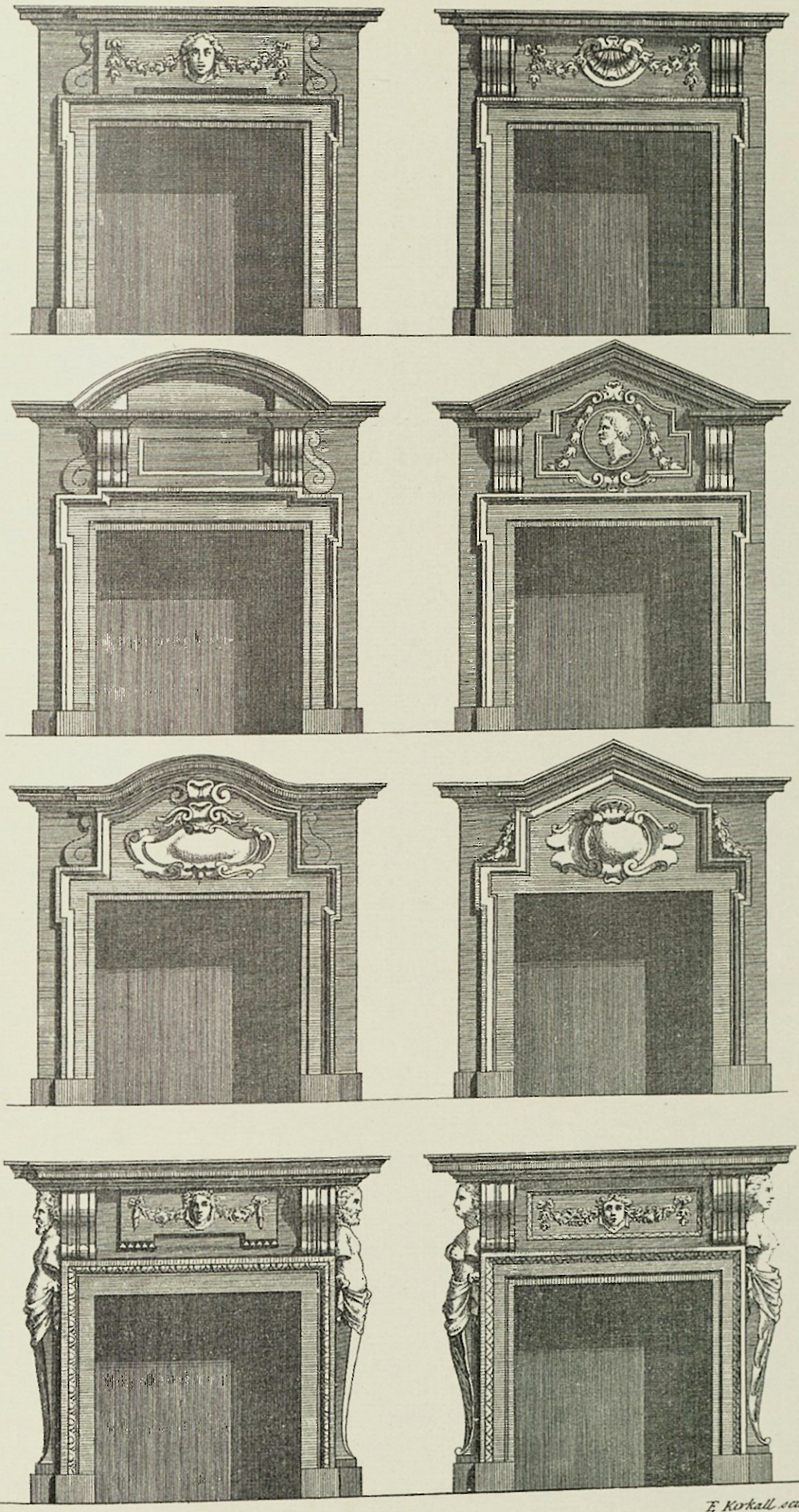
ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.



Jacobe Gibbs Architecto Delin. *E. Kirkall sculp:*

FROM JAMES GIBBS.

ANDREW B. GRAHAM PHOTO-LITHO WASHINGTON, D.C.

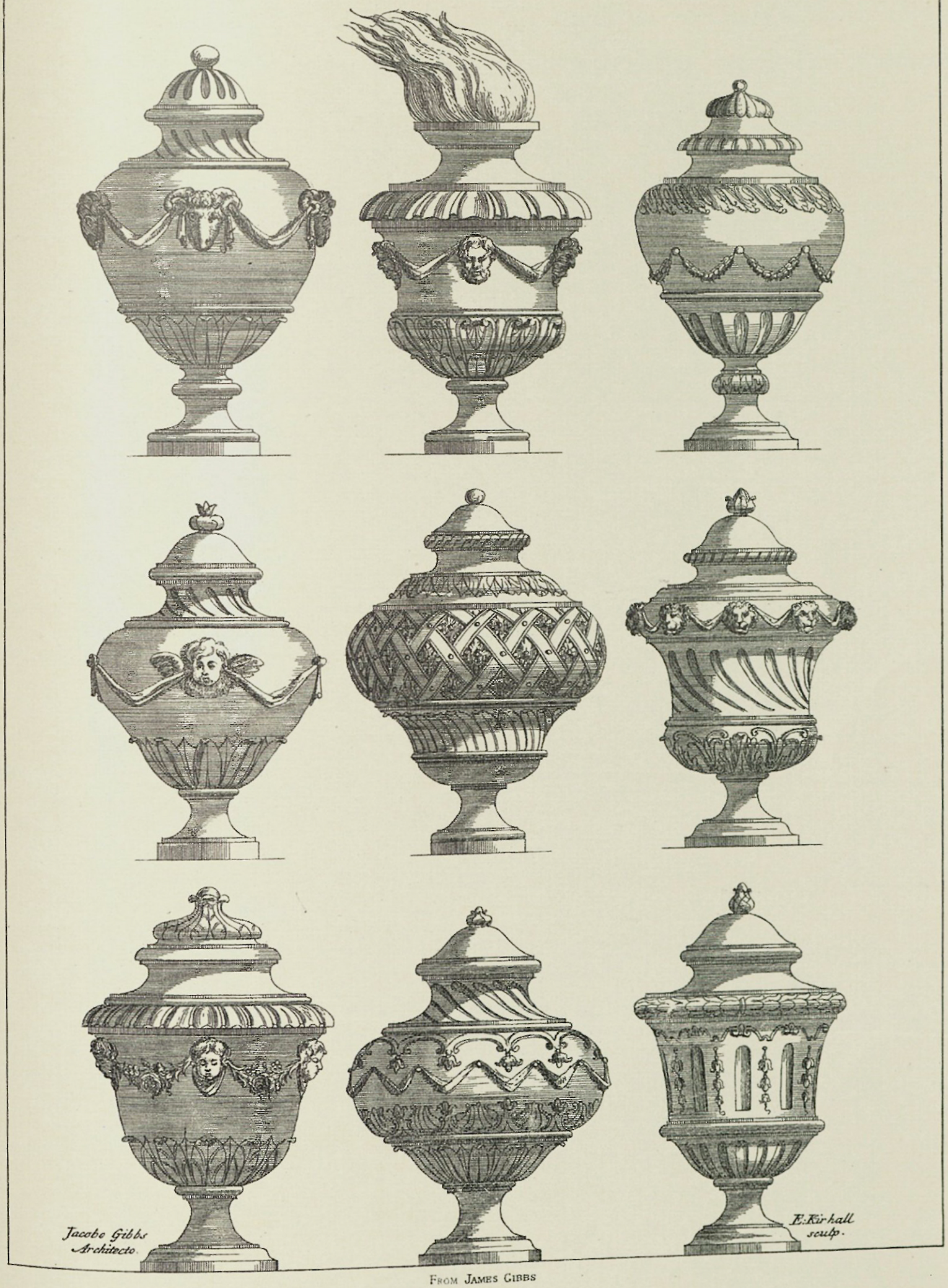


Jacobo Gibbs Architecto

From James Gibbs

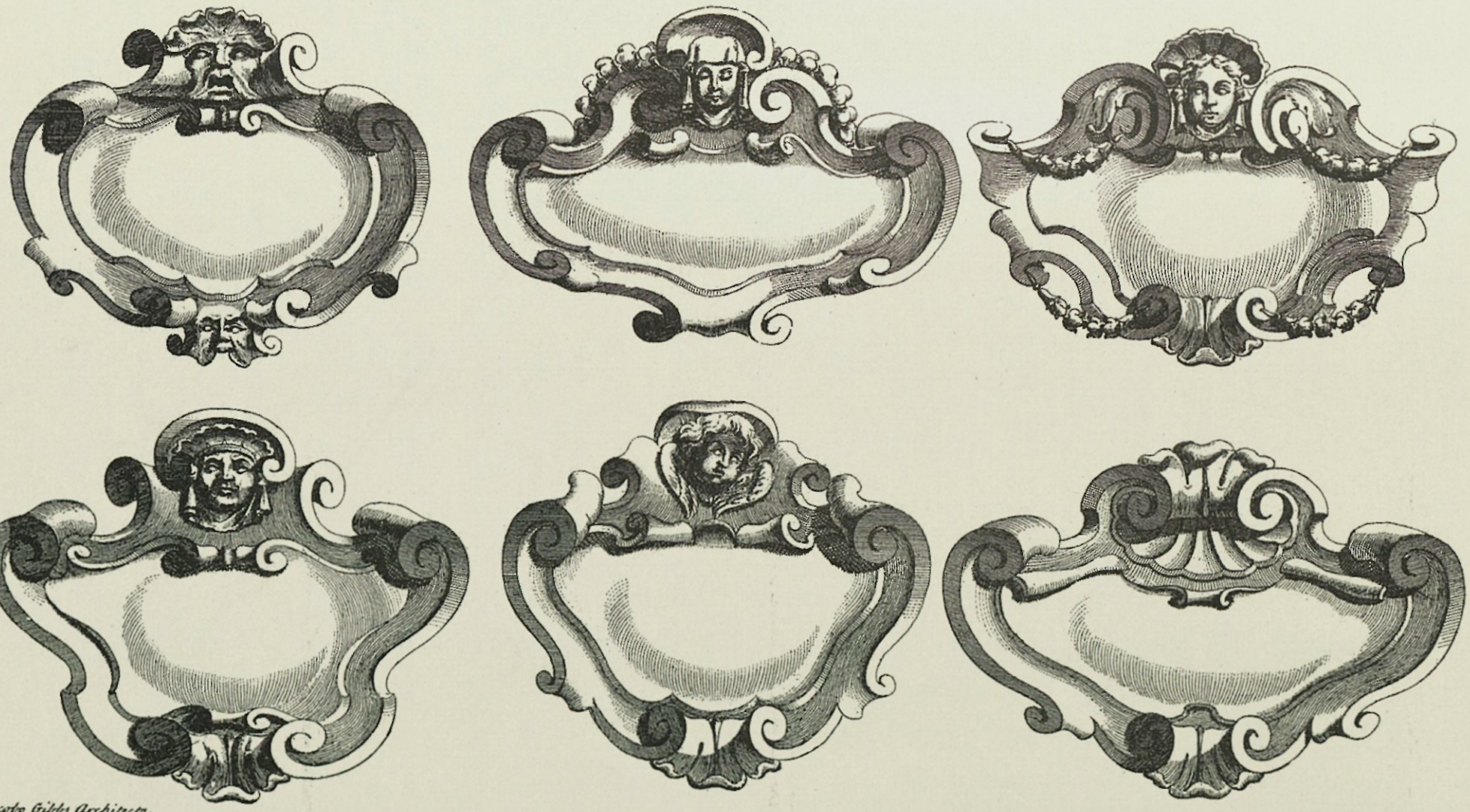
E. Kirkall sculp

ANDREW B. GRAHAM PHOTO-LITHO WASHINGTON, D.C.



FROM JAMES GIBBS

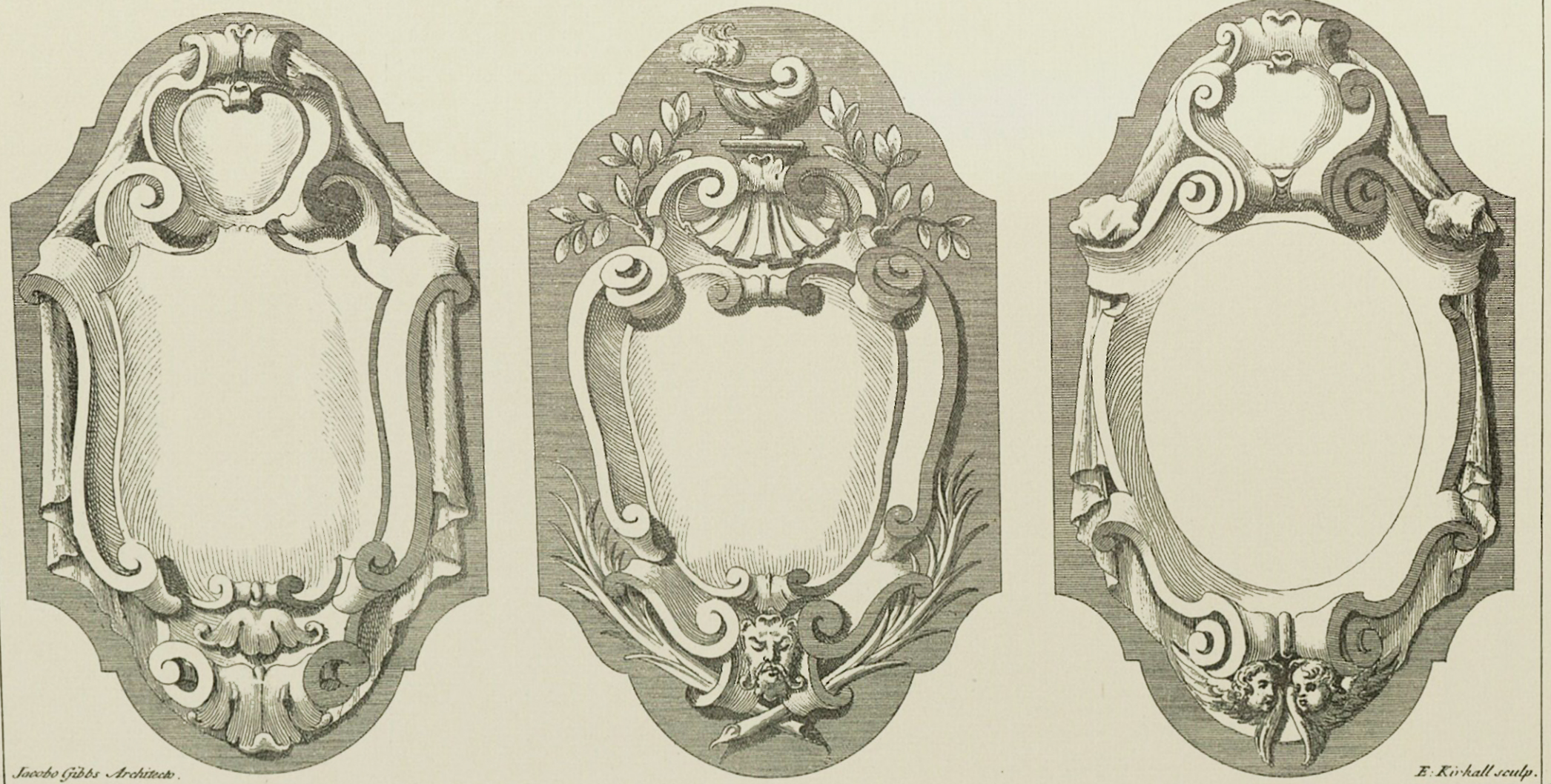
ANDREW B GRAHAM PHOTO LITHO WASHINGTON D.C.



Jacobo Gibbs Architecto.

E. Kirkall sculp.

Andrew B Graham. Photo-Litho Washington, D.C.



Jacobo Gibbs Architecto.

E: Kirkall sculp.

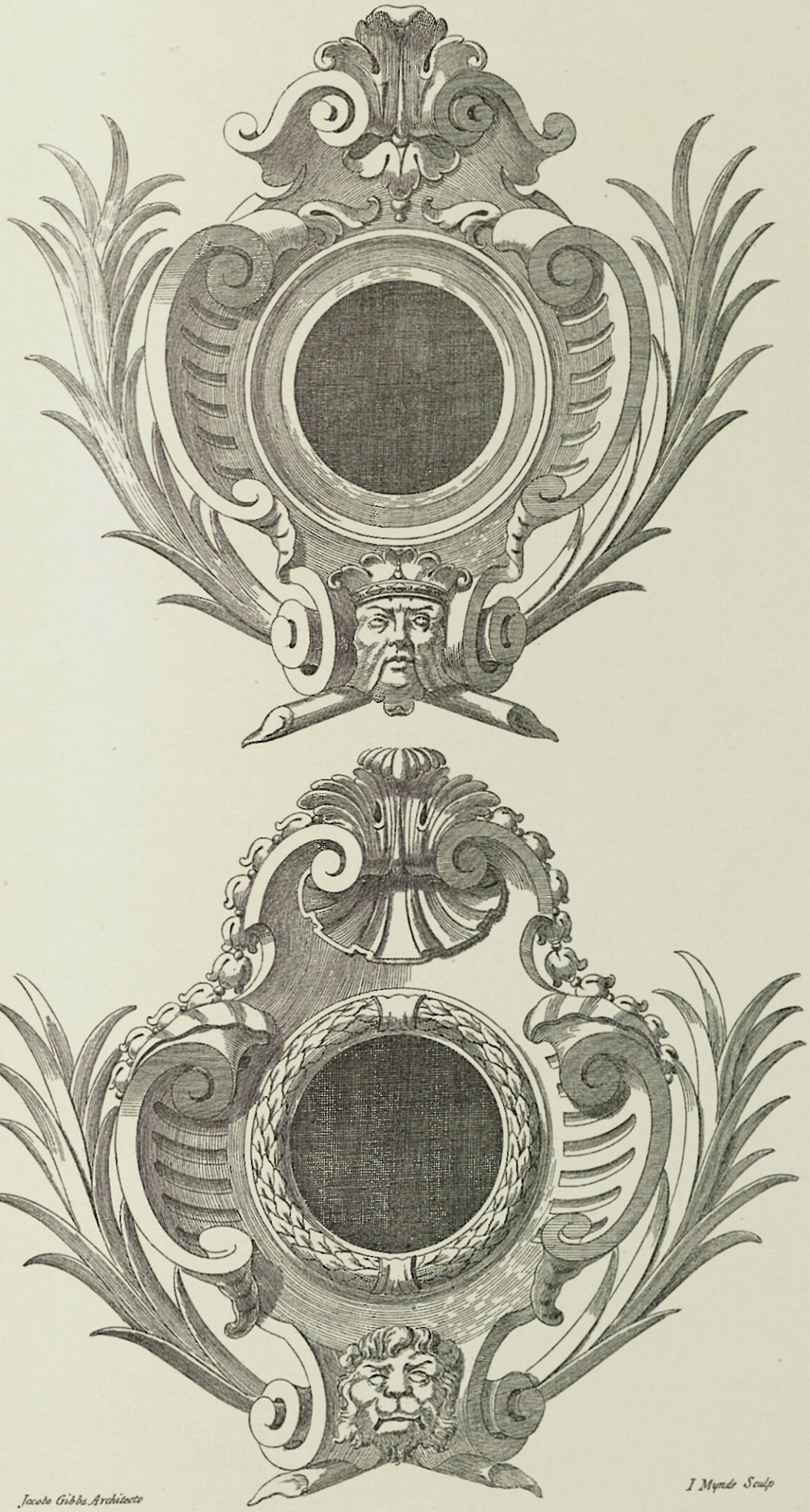
THE ARCHITECTURAL REPRINT.

Vol. 4 Plate 35.

ANDREW B. GRAHAM PHOTO LITHO. WASHINGTON, D.C.

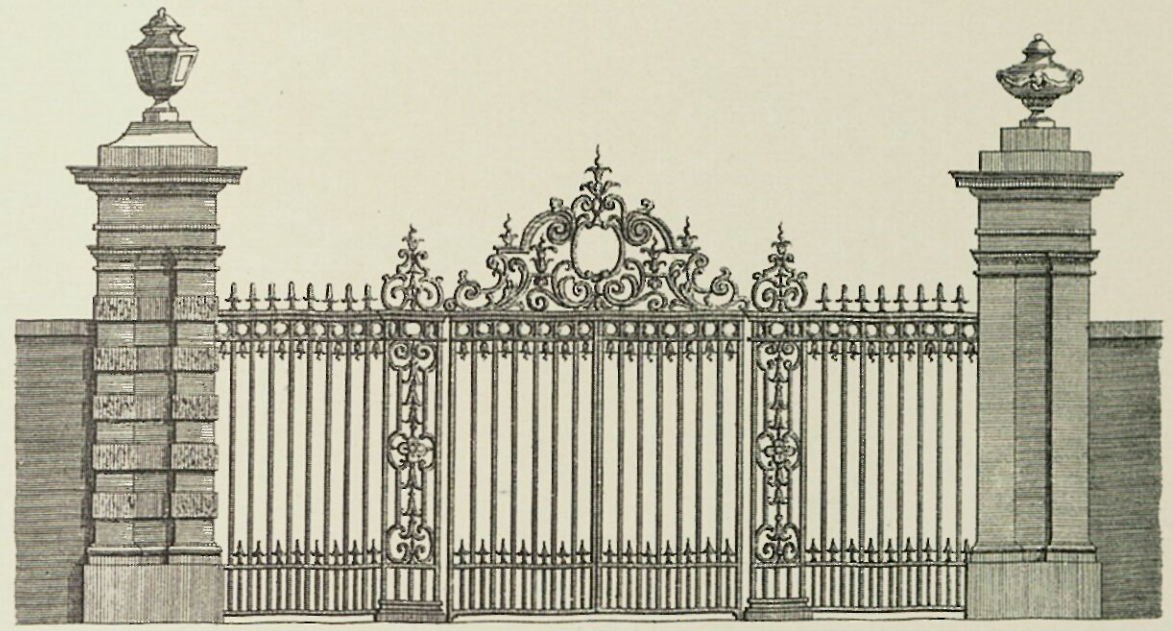
FROM JAMES GIBBS.

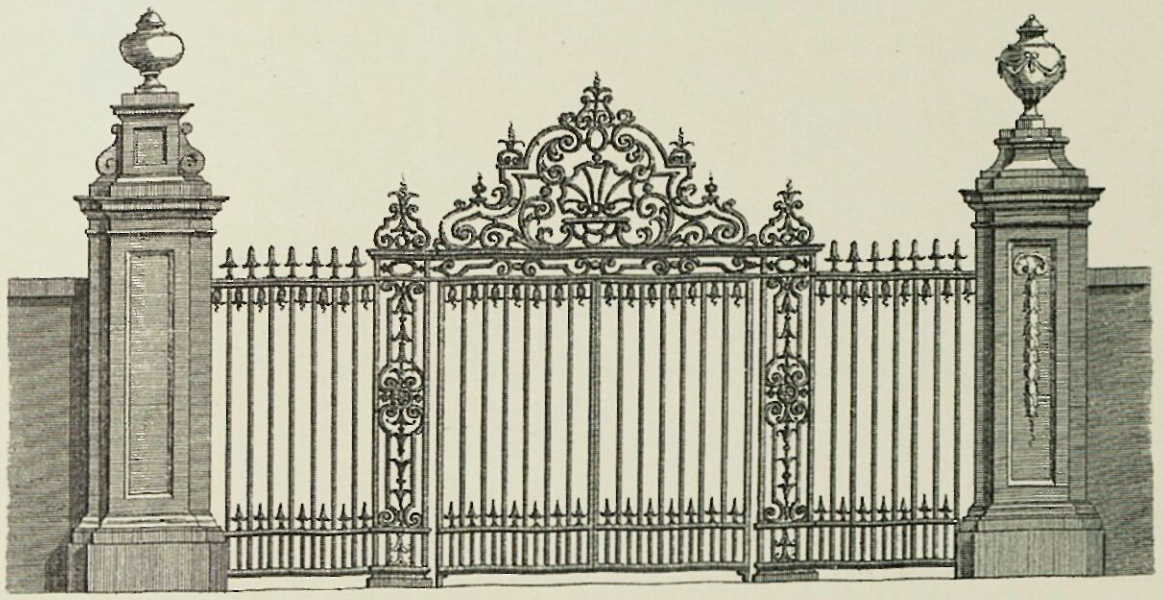
ANDREW B. GRAHAM PHOTO-LITHO WASHINGTON, D.C.

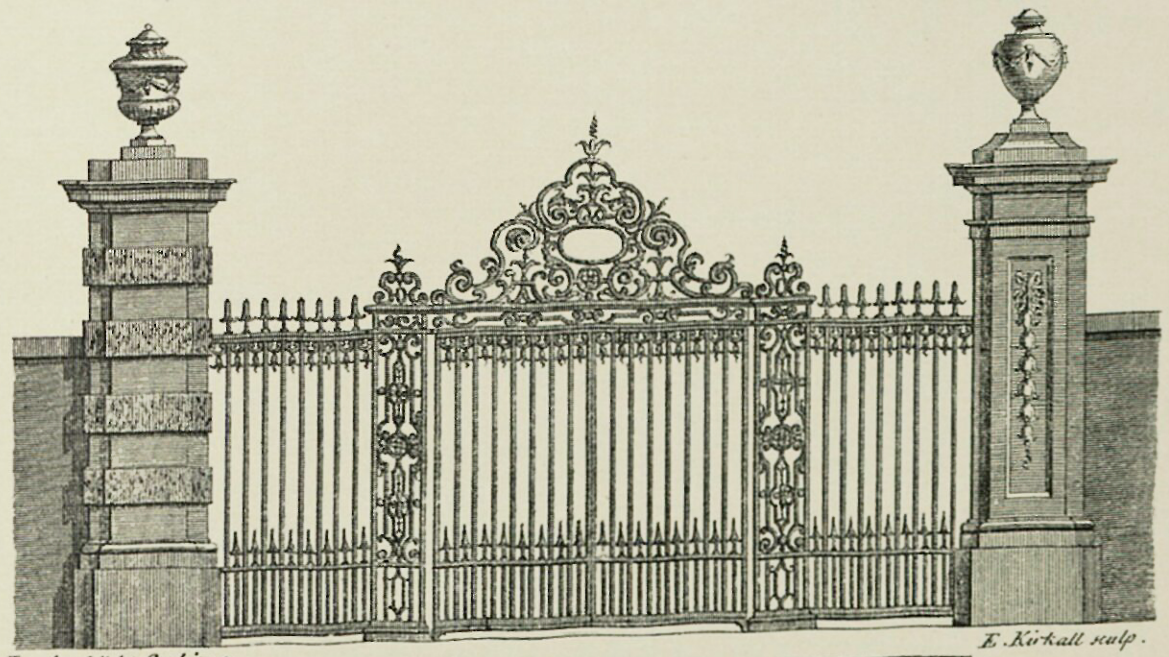


From James Gibbs.

ANDREW B GRAHAM PHOTO-LITHO WASHINGTON, D.C.







Jacobo Gibbs Architecto. E. Kirkall sculp.

FROM JAMES GIBBS.

ANDREW B GRAHAM PHOTO LITHO WASHINGTON, D.C.

BATTY LANGLEY

ABSTRACT OF TEXT

FROM

BUILDERS' JEWEL AND BUILDERS'

CHEST-BOOK

(London, 1746)

PUBLISHED BY
THE REPRINT COMPANY, Inc.,
1423 F Street Northwest,
WASHINGTON, D. C.

The following is copied from the original text contained in the "Builders' Jewel" (Batty Langley, London, 1746), and from the "Builders' Chest Book or Complete Key to the Five Orders of Architecture" (Batty and Thomas Langley, London, 1739), and are printed in the order named.

FROM THE BUILDERS' JEWEL.

INTRODUCTION.

NOTWITHSTANDING there are many volumes already extant on the subject of architecture, yet, as not one of them is made a fit size for the pocket, and it being an impossibility for the general part of workmen to retain and carry in their minds all the useful rules and proportions by which works in general are performed, I have, therefore, at the request of many good workmen, and for the sake of young students, compiled this work, wherein I have reduced the whole to such short and easy rules that the workman may not only at the first view renew his memory as occasions may require, but apprentices who may be absolutely unacquainted with this noble art, and are so unfortunate, as many have been, and are, to be bound to jobbing masters who know but little, may without the help of any, by assiduous application at their leisure hours in evenings when the business of days is over, etc., make themselves such masters herein that few masters are able or willing to make them. And indeed I must own that 'tis a pleasure to me to see the spirit of emulation so powerful among young builders at this time when everyone of sense is endeavoring to become the most excellent in his way, and thereby make himself the most useful, both to himself and his country.

It is useful knowledge only that makes one man more valuable than another, and especially that part of knowledge which immediately concerns the business he is to live by, and, therefore, if this work should prove a help to the improvement of knowledge in youth (for whose sakes 'tis chiefly intended), and be no affront to the sage workman by reinforming him of those rules which have slipped his memory, and informing him of others which he never knew, it will answer the desired end of their hearty well-wisher.

LONDON, *November 2, 1746.* THO. LANGLEY.

CHAPTER I. OF THE ORDERS IN GENERAL AND OF THEIR PRINCIPAL PARTS.

The orders in general are the Tuscan, Doric, Ionic, Corinthian, and Composite.

Their principal parts are their pedestals, columns, and entablatures.

The height of the pedestal in every order is always one-fifth of the whole height of the entire order.

The height of the Tuscan column is seven diameters, the Doric eight, the Ionick nine, and the Corinthian and Composite each ten diameters.

The Tuscan column is diminished at its astragal or neck of its capital one-fourth of its diameter next above its base, the Doric one-fifth, the Ionic, Corinthian, and Composite, each one-sixth.

The diminution of every column begins at one-third of the shaft's height above the base.

The heights of the Tuscan and Doric entablatures are each equal to one-fourth of their column's height, and the Ionic, Corinthian, and Composite to one-fifth of their column's height.

These general proportions of their principal parts being first understood, the proportions of their particular parts may be easily understood also as following:

CHAPTER II. OF PEDESTALS AND THEIR PARTS.

Every perfect pedestal consists of three principal parts, namely, a base, dado or die, and cornice, which are divided as follows:

The Division of the Principal Parts of Pedestals Explained.

RULE. Divide the given height in four parts; give the lower one to the height of the plinth, one-third of the next one to the height of the mouldings on the plinth, half the upper one to the height of the cornice, and the remains between will be the height of the dado.

When a column is placed on a pedestal, the projection of the pedestal's dado is found by the projection of the plinth to the base of the column which always stands perpendicular over the upright of the dado, but if a pedestal is to be made without a column, the breadth of the dado must be found before we can proceed to determine the projections of the several members in the base and in the cornice, because 'tis from the upright of the dado that their proj ctions are made, and which are found by the following rules:

The Breadth of Dadoes to Pedestals Explained.

RULE I. To Find the Breadth of the Dado of the Tuscan Pedestal. Fig. 1, Plate 59, Vol. 5, No 2.

Divide the height of the plinth and its mouldings in five parts, and the upper one in seven; on *z* with a radius of four of the great parts and four-sevenths, describe the arch *x g*; then *z g* is the semi-breadth required.

RULE II. To Find the Breadth of the Dado of the Doric Pedestal. Fig. 10, Plate 60, Vol. 5, No. 2.

Divide the height of the plinth in five parts, and the upper one in three, turn up one of the three parts to *n*, and on *x* with the radius of five parts, and said one-third, describe the arch *b y*; then *x y* is the semi-breadth required.

RULE III. To Find the Breadth of the Dado of the Ionic Pedestal. Fig 21, Plate 97, Vol. 5, No. 4.

Divide the height of the plinth in three parts, the upper one in three, and the upper one thereof in three again, then abating the two upper small parts with the remains of the plinth's height, on *x*, describe the arch *v y*; then *x y* is the semi-breadth required.

RULE IV. To Find the Breadth of the Dado of the Corinthian and Composite Pedestals. Fig. 39, Plate 25, Vol. 6, No. 1, and Fig. 57, Plate 58, Vol. 6, No. 2.

Divide the height of the plinth in three parts, and the upper one in three; on *x*, with the radius of two parts and two-thirds, describe the arch *v y*; then *x y* is the semi-breadth required.

Before I show how to determine the projections of the mouldings on the plinths, and in the cornices of the pedestals, I must show how to divide their respective heights, and first, of the mouldings on the plinths of the several pedestals.

The Divisions of Mouldings on the Plinths of Pedestals Explained.

RULE I. To Divide the Heights of the Mouldings on the Plinth of the Tuscan Pedestal. Fig. 1, Plate 59, Vol. 5, No. 2.

Divide the height in six, as at *b*, give the under and upper ones to the fillets, and the middle of four to the cima recta.

RULE II. To Divide the Heights of the Mouldings on the Plinth of the Doric Pedestal. Fig. 10, Plate 60, Vol. 5, No. 2.

Divide the height in four parts, as at *b*, give the upper one to the cavetto, half of the next to its fillet, half the lower one to the lower fillet, and the remains to the cima recta.

RULE III. To Divide the Heights of the Mouldings on the Plinth of the Ionic Pedestal. Fig. 21, Plate 97, Vol. 5, No. 4.

Divide the height in two, as at *b*, and each in four, give the

upper one and half to the cavetto, the next half to its fillet, the next one to the astragal, the lower one to the fillet, and the remains to the cima.

Rule IV. To Divide the Heights of the Mouldings on the Plinth of the Corinthian Pedestal. Fig. 39, Plate 25, Vol. 6, No. 1.

Divide the height in four, as at *b*, the upper one and third downwards, each in three, give the upper one and half to the cavetto, the next half to the fillet, the next one to the astragal, the lower fourth to the height of the torus, and one-third of the next to its fillet.

Rule V. To Divide the Heights of the Mouldings on the Plinth of the Composite Pedestal. Fig. 57, Plate 58, Vol. 6, No. 2.

Divide the height in four, and the upper and third part downwards, each in three, give the upper two of the upper part to the cavetto, the next one to its fillet, the lower fourth part to the torus, and one-third of the next part to its fillet.

The Division of Mouldings in the Cornices of Pedestals Explained.

Rule I. To Divide the Heights of the Mouldings Contained in the Cornice of the Tuscan Pedestal. Fig. 1, Plate 59, Vol. 5, No. 2.

Divide the height, as at *a*, in six parts, give the upper one to the regula, the next three to the plat-band, and the lower two to the cima reversa.

Rule II. To Divide the Heights of the Mouldings Contained in the Cornice of the Doric Pedestal. Fig. 10, Plate 60, Vol. 5, No. 2.

Divide the height, as at *a*, in four, give half the upper one to the regula, the next one and half to the plat-band, the next one to the ovolo, the upper one-third of the lower one to the fillet, and the remaining two-thirds of the lower one to the cavetto.

Rule III. To Divide the Heights of the Mouldings Contained in the Cornice of the Ionic Pedestal. Fig. 21, Plate 97, Vol. 5, No. 4.

Divide the height in twelve parts, as at *a*, give the upper to the regula, the next two to its cima reversa, the next three to the plat-band, the next three to the ovolo, the next one to the astragal, half the next one to its fillet, and the remains, one and a half, to the cavetto.

Rule IV. To Divide the Heights of the Mouldings Contained in the Cornice of the Corinthian Pedestal. Fig. 39, Plate 25, Vol. 6, No. 1.

Divide the height in three, as at *a*, also the upper one in six, the lower half of the middle one in three, and the lower half of the lower one in three; of the six upper small parts, give the upper one and one-third to the regula, the remaining two-thirds and two parts to the cima reversa, and the next one to the astragal; give the last one and half the middle great part to the plat-band, also one-third of the remaining half to the fillet on the cima recta, and the remaining two-thirds and the upper half of the lower great part to the cima recta; lastly, give the upper one part of the half of the lower part to the astragal, half the next to its fillet, and the remains to the cavetto.

Rule V. To Divide the Heights of the Mouldings Contained in the Cornice of the Composite Pedestal. Fig. 57, Plate 58, Vol. 6, No. 2.

Divide the height in six parts, as at *a*, give half the upper one to the regula, the next one to the cima revera, the next one and half to the plat-band, one-third of the next one to the fillet on the cima recta, the remaining two-thirds and the next one to the cima recta, one-third of the last one to the fillet on the cavetto, and the remaining two-thirds to the cavetto.

The heights of the several mouldings on the plinths and in the cornices being thus found, I shall proceed to show how to give each its proper projecture from the upright of their dados.

The Projections of the Plinths, and Members on the Plinths and in the Cornices of Pedestals, Explained.

Make the projection of the plinth from the upright of its dado, in every order, equal to the height of the mouldings on the plinth, and make the projection of every cornice the same.

To Find the Projections of the Several Members.

Divide the projection of the Tuscan plinth in six, and of all the other orders in four, and then subdividing the parts, as exhibited in the scales of projection, which are placed between the base and cornice of each pedestal; from thence stop or terminate the projection of each member, as by inspection is shown, and thus are the five orders of pedestals completed.

Chapter III. Of Columns and Their Parts.

A column consists of three principal parts, viz., a base, shaft, and capital.

The Heights of Columns Explained.

To Find the Heights of Columns Having the Heights of the Columns and Entablatures Given, These Are the Rules.

Rule I. In the Tuscan and Doric orders. Fig. 1, Plate 59, Vol. 5, No. 2, and Fig. 10, Plate 60, Vol. 5, No. 2.

Divide the given height of the column and entablature in five parts; the upper one is the height of the entablature, and the lower four of the column; divide the height of the Tuscan column in seven, and of the Doric in eight, and one is the diameter of the column.

Rule II. In the Ionic, Corinthian, and Composite orders. Fig. 21, Plate 97, Vol. 5, No. 4, and Fig. 39, Plate 25, Vol. 6, No. 1; also Fig. 57, Plate 58, Vol. 6, No. 2.

Divide the given height of the column and entablature in six parts; the upper one is the height of the entablature, and the lower five of the column; divide the height of the Ionic column in nine, and the Corinthian and Composite columns each in ten parts, and one is the diameter.

The Heights and Projections of the Bases of Columns Explained.

The height of the base of every column is precisely half its diameter next above the base, and the projection of the plinth from the upright of the shaft is always equal to one-sixth of the column's diameter.

The height of plinths to the bases of columns is either equal to half the height of the whole base, as in the Tuscan base, or to one-third of the base's height, as in the Doric base on the right-hand side, Fig. 11, Plate 65, Vol. 5, No. 3, and in the Ionic, Corinthian, and Composite bases.

To make the construction of bases to columns easy, I will explain how to divide the heights and terminate the projections of the members contained in the Tuscan and Doric bases, by which those of the Ionic, Corinthian, and Composite will be understood as being no more than repetitions of the like rules.

Rule I. To Divide the Heights and Terminate the Projections of the Members Contained in the Base of the Tuscan Column. Fig. 2, Plate 59, Vol. 5, No. 2.

I. To Determine Their Heights.

Divide the height in two, and give the lower one to the plinth as aforesaid; divide the upper one in four, give the lower three to the torus and the upper one to the cincture.

II. To Determine Their Projectures.

Divide the projection of the plinth from the upright of the shaft in four parts, and the second part in four, then one part and three-fourths of the second stops the cincture, and the torus is always in every order the same projection as the plinth.

Rule II. To Divide the Heights and Terminate the Projections of the Members Contained in the Attic Base to the Doric

Column on the Right-hand Side of Fig. 11, Plate 65, Vol. 5, No. 3.

I. To Determine Their Heights.

Divide the height in three parts, the middle part in four, and the upper part in two; give the lower one part to the plinth, as aforesaid, three-fourths of the next to the lower torus, and half the upper one to the upper torus; divide the remainder between the two torus's in six, give the upper and lower ones to the two fillets, and the middle four to the scotia.

II. To Determine Their Projectures.

Divide the projection of the plinth in four parts, and the second and third parts in halves, from whence perpendicular lines being drawn up will terminate the cincture and the two fillets of the scotia.

The shaft of a column is that part which is contained between its base and capital, and consists of three parts, viz., its cincture, trunk, and astragal, excepting in the Tuscan, where the cincture is made a part of the base to the column.

To render the shafts of columns agreeable to the taper growth of the trunks of trees (with which the first columns were made) their shafts, or rather their trunks, are therefore diminished from the lower third part, up unto the astragal, as following:

The Manner of Rusticating the Shafts of Columns Explained.

The shafts of the Tuscan, Doric, and Ionic columns are sometimes rusticated, but those of the Corinthian and Composite seldom or ever.

RULE. To Rusticate the Tuscan, Doric, and Ionic Shafts.

Divide the height of the Tuscan in seven, as in Fig. 1, Plate 59, Vol. 5, No. 2, the Doric in eight, as in Fig. 10, Plate 60, Vol. 5, No. 2, and the Ionic in nine, as in Fig. 21, Plate 97, Vol. 5, No. 4, then the blocks and intervals in the Tuscan and Ionic will each be one diameter, and those of the Doric two diameters.

The projection of the blocks are generally made equal to the projection of the plinth as expressed in the Tuscan order and continued upright without diminution, but as the upper parts of the shafts seem thereby overcharged, I therefore recommend the diminution to be parallel with the shaft as in the Doric order.

The Manner of Fluting the Shafts of Columns Explained.

The shafts of the Doric, Ionic, Corinthian, and Composite columns are sometimes fluted and cabled, but the shaft of the Tuscan column seldom or ever was, as being an embellishment too gaudy for so robust and simple an order whose beauty consists in its native plainness, and indeed all columns have a grander aspect when entirely plain than when rusticated or fluted. The Doric shaft, with respect to its Herculean aspect, should not be fluted, but as the ancients dispensed therewith, the moderns frequently do the same. But, however, as herein majesty must be preserved, therefore the ancients allowed but twenty flutes, and those without fillets, as in the left side of Fig. 11, Plate 65, Vol. 5, No. 3, thereby making them of a masculine aspect, while those of the Ionic and Corinthian shafts are charged with twenty-four flutes and as many fillets (each of which are equal to one-third of a flute), which renders them less capacious, and of an effeminate aspect agreeable to the characters of those orders.

RULE. To Divide the Flutes of a Doric Column. Fig. 11, Plate 65, Vol. 5, No. 3.

Divide the circumference into twenty equal parts, and draw lines, thereby making a polygon of twenty sides; on each side complete an equilateral spherical triangle as *a b c* on the left of above plate; and on the external angle as *b*, describe the curve *a c*, which is the depth or sinking in of a flute.

RULE. To Divide the Flutes and Fillets of an Ionic, Corinthian, or Composite Column. Fig. 25, Plate 98, Vol. 5, No. 4.

Divide the circumference of a semicolumn in twelve parts, and each part in eight as *a b*. Give three parts to each semiflute as *a h* and *i b*, and two parts to each fillet as *h i*.

The sinkings or depths of these fillets are either the arch of a quadrant, as those on the right-hand described on the centers *c e*, etc., or of a semicircle, as those on the left, described on the centers *x x*, etc.

RULE. To Describe Cablings in the Flutes of a Column. Fig. 25, Plate 98, Vol. 5, No. 4.

On the points *z z* with the radius *z x*, describe the arches *y x o*, etc., which are the bases of the cablings and whose height finishes at the first third part of the shaft's height.

RULE. To Set Out Flutes and Fillets on the Shaft of a Column. Fig. 26, Plate 98, Vol. 5, No. 4.

On a pannel, etc., draw a right line, as *a b*, and thereon set off twenty-four equal parts at pleasure, which, together, must always be less than the girt at the astragal of the column to be fluted.

Divide any one part in four parts and take one part in the compasses, and set it off in every of the other twenty-three parts; and from the several parts so divided (which will be to one another as 1 to 3; that is, a fillet to a flute), draw up right lines at right angles from the divided line. This done, strike a perpendicular chalk-line down the front of the column; and, being provided with two straight-edged pieces of parchment, etc., therewith girt the column at its base and at its astragal. Apply the girts so taken to the parallel lines aforesaid, so that their extremes shall just touch the two outer parallels, as at *e c* and *d f*. Then keeping them there, with a pencil mark their edges at the meeting of each parallel, and thereby the two girts will be divided into the flutes and fillets agreeable to your column to be fluted. This done, apply any end of each of the parchment girts to the bottom and the top of the front central line, and then, embracing the column at its base and astragal, remove each girt until you bring the middle of a flute on the central line, and then prick off the breadth of every flute and fillet in the two girts, which will stand exactly perpendicular over each other.

NOTE.—In large columns it may be necessary to set out the breadth of the flutes and fillets in one or more places between the first third part of the shaft's height and the astragal, which, when required, may be most exactly done by girting at the parts required and proceeding afterwards in every other respect as aforesaid.

The Fluting of Pilasters Explained.

RULE. To Flute a Pilaster With Fillets and a Bead at Each Quoin. Fig. 37, Plate 25, Vol. 6, No. 1.

Draw a line at pleasure as *a b*, and thereon set thirty-one equal parts, which together shall be greater than the pilaster to be fluted. Take the thirty-one parts in your compasses, etc., and on the first and last points make the section *c*, and draw the lines *c a* and *c b* which will complete an equilateral triangle. Set the breadth of the pilaster from *c* to *d* and to *e*, and draw the line *d e*, which being parallel to *a b* is therefore equal to the breadth of the pilaster. Now right lines drawn from the thirty-one parts to the point *c*, they will divide the line *d e* in similar thirty-one parts also. Of which give the two outer parts to the two beads at the quoins; the next two outer ones to the two outer fillets, the next three to the breadth of a flute, the next one to a fillet, the next three to a flute, the next one to a fillet, etc.

NOTE.—By the same rule a pilaster with flutes and fillets only as Fig. A, is divided from twenty-nine parts, first set off at pleasure and then proceeding as before.

Having thus explained the bases and shafts of columns, etc., I shall now proceed to their capitals.

Of capitals there are two kinds, viz., the one consisting of mouldings only as those of the Tuscan and Doric, and the other of mouldings and sculptured ornaments as the Ionic, Corinthian, and Composite.

The Heights of Capitals Explained.

The height of the Tuscan and Doric capitals are each precisely a semidiameter. The height of the ancient Ionic capital, in its mouldings above the astragal of the shaft, is but one-third of a diameter, or twenty minutes; but, including the depth of its volute, 'tis thirty-five minutes, which exceeds the volute to the modern capital by five minutes. The height of the Corinthian capital is one diameter and one-sixth, and also is the height of the Composite capital.

The Divisions and Projections of the Members in the Tuscan and Doric Capitals Explained. Fig. 2, Plate 59, Vol. 5, No. 2, and Fig. 11, Plate 65, Vol. 5, No. 3.

Rule I. To Divide the Heights and Determine the Projections of the Members in the Capital of a Tuscan Column or Pilaster.

I. To Divide the Heights of the Members.

Divide the height in three parts (as on the left side). Divide the middle one in six, of which give the lower to the fillet under the ovolo, and the other five to the ovolo. Divide the upper one into four; give the upper one to the fillet, and the other three to the fascia of the abacus. Set down *a b*, half the height of the freeze or neck of the capital, from *b* to *c* and divide it in three parts; give the upper two to the astragal and the lower one to its fillet.

II. To Determine the Projections.

Divide the semidiameter of the column at its astragal (as is done above on the capital) in six parts, and give three to the projection of the upper fillet.

But if the capital is of an undiminished pilaster, then divide the semidiameter of the pilaster (as above on the capital) in eight parts, and give three to the projection, as before.

Note.—By the scale of projection, placed against the neck of the capital, you see that the whole projection is divided in three; the first one in two and the last one in four. The half of the first one stops the projection of the fillets under the astragal and ovolo, and the two first of the four, in the outer one-third part, stops the ovolo and fascia of the abacus.

Rule II. To Divide the Heights and Determine the Projections of the Members Contained in the Capital of a Doric Column or Pilaster. Fig. 11, Plate 65, Vol. 5, No. 3.

I. To Divide the Heights of the Members.

Divide the heights in three parts (as on the left side). Divide the middle one in three; of which the lower one divided in three give the upper two to the astragal, and lower one to the fillet. Divide the upper third part in three. Give the lower two to the fascia of the abacus; and the upper one thereof divided in three, give the upper one to the fillet and the lower two to the cima reversa.

Note.—The height of the astragal to the shaft is found, as before, in the Tuscan column.

II. To Determine Their Projections.

Divide the semidiameter of the column at its astragal (as above on the capital), in four, and give two to the projection of the upper fillet, but if the capital is of an undiminished pilaster, (as on the righ-hand side), then divide the semidiameter of the pilaster (as above on the capital), in five parts, and give two to the projection, as before.

By the scales of projection on each side of the capital, you see that the whole projection is there divided in four parts, from which, and their subdivisions, the several members of the two varieties of capitals have their projections determined.

The Ancient Ionic Capital and Its Volute Explained. Fig. 23, Plate 97, Vol. 5, No. 4.

Rule I. To Divide the Height of Its Members and Describe Its Volute.

I. To Divide the Height of Its Members.

Divide the given height as *k x*, in eleven parts, give the upper one to the upper fillet, the next two to the cima reversa, which, with the aforesaid fillet makes the abacus, give the next one to the list of the volute, the next three to the band of the volute, and the remaining four to the ovolo. This done, set down eight of the above eleven parts from *x* to *I*; give the first two to the astragal, the next one to its fillet, and the lower five to the depth of the volute. Divide *r s* on the right-hand (which is equal to *k x*, or twenty minutes, the height of the mouldings of the capital), in four parts, and turn down one part to *d*, then *r d* will be equal to twenty-five minutes, which is equal to the semidiameter of the column at its shaft. Now, admitting *b v* to be the central line of the column, make *v e* equal to *r d*, and draw the line *e c h*, which will be the upright of the column. Make *h g* equal to two-thirds of *a l*, the height of the astragal, and from the point *g* draw the cathetus or line *f g* parallel to the central line.

Divide *g h* in four parts; the first one stops the astragal at *a*; make *f n* equal to *f i*, which will terminate the projection of the abacus.

Rule II. To Describe the Ionic Volute.

From one part below *x* draw the line *p m o* for the central line of the astragal, intersecting the cathetus *i g* in *o*. On the point *o*, with the radius *o z*, describe the circle or eye of the volute (which is represented at large by the Figure R), wherein describe the geometrical square, and draw its diameters 2, 4, and 1, 3. Divide each semidiameter in three parts, as at the points 6.10, 5.9, 12.6, and 11.7, which are the centers numbered in order, on which the outline of the volute is described, viz., the point 1 is the center to the arch *i m;* the point 2, of the arch *m g;* the point 3, of the arch *g p*, etc.

The inward line of the list of the volute is described on twelve other centers, which are at one-fifth of the distance between the other twelve centers, and which are signified by the small divisions next within the twelve centers in the eye of the volute at large, in Fig. 22, Plate 97, Vol. 5, No. 4.

To gradually diminish the list of this volute, we must divide its height or breadth in twelve parts, as expressed above in Plate XXII, and at every quarter of its rotation abate its breadth one of those parts, as expressed by the numerical figures affixed, which will cause it to terminate at the eye in a point.

Note.—Fig. A B, (Fig. 23, Plate 97, Vol. 5, No. 4,) is a view of half a side of the capital, wherein B shows the thickness of the volute, whose height is equal to *i g* in the front. The heights of the other parts are shown by the scale of parts on the left, and is the same as the like scale above.

Note.—The abacus to this capital being square, is therefore called by workmen a trencher capital; and indeed very properly, because the word abacus is derived from the Greek word abax, signifying a square trencher.

The Modern Ionic Capital Explained. Fig. 24, Plate 98, Vol. 5, No. 4.

Rule. To Divide the Heights of the Members Contained in Its Abacus and to Determine their Projections.

This capital, tho' called modern, was invented by Vincent Scammozzi, and, including its volute, is precisely half a diameter in height.

I. To Find the Heights of the Members.

Divide its height in three parts and the upper half of the upper one in four, as on the left, of which give the upper three to the ovolo and the other one to the fillet under it. Divide the lower two parts and half in eight parts (as on the right); give the upper one and half to the fascia of the abacus; the next half to the recess under the abacus; the next two to the ovolo; the next one to the astragal, and the next half to its fillet.

II. To Find the Projectures of the Members.

Draw the central line of the column *h g*; and in any place, as at *g*, draw the line *a b* at right angles to *h g*, and of length at pleasure. Make *g c* and *g d* each equal to the semidiameter *i k*, and divide it into twelve parts, each representing five minutes (or one-twelfth of a diameter). Make *c a* and *d b* each equal to fifteen minutes (or one-fourth of the diameter), which terminates the projection of the extreme parts or returned horns of the abacus, as exhibited by the dotted parallel lines drawn thence up to them.

And from the subdivisions of the two outer five minutes the projections of the other parts of the abacus are determined in the same manner, as also are projections of the ovolo, astragal, and fillet represented by dotted lines within the volute.

The volute of this capital is represented in Fig. 22, Plate 97, Vol. 5, No. 4, and is described the same as that of the ancient capital, for though it appears to be elliptical when seen in a direct view as being thereby something fore-shortened, yet 'tis circular as the other.

Under this capital I have placed half its plan, whose construction being plainly exhibited by the dotted perpendicular lines proceeding from the members in the elevation, needs no further explanation.

The Corinthian Capital Explained. Fig. 41, Plate 26, Vol. 6. No. 1.

This capital was originally adorned with the acanthus leaves only; but as some delight in variety, I have therefore on same plate given the acanthus with the olive, laurel, and parsley to be employed at discretion.

The height of this capital was originally but one diameter; but modern architects thinking it too short they therefore added ten minutes, thereby making its height seventy minutes and giving it a much more magnificent aspect than it had before.

By the measures affixed, which is no more than the height divided in seven parts of which the upper one is the abacus, the height of every part is adjusted, and by the plan and elevation in Fig. 42 the breadths and distances of the leaves, etc., are fully exemplified in the like manner.

In the drawing of th's capital the young student must first accustom himself to express only the leaves in gross, as expressed in this and the forty-fourth plate, until he has made himself a master of forming their outlines, when it will be a pleasure to raffle them, as expressed in Fig. 43, Plate 26, and Fig. 45, Plate 27, in Vol. 6, No. 1.

And as the capital of a pilaster has all its leaves in each face in a direct view, contrary to those of a capital to a column, and is one-sixth of a diameter more in breadth, I have, therefore, to explain the difference and parts shown in Fig. 44, the plan and elevation of a capital to a pilaster in the same manner as that of a column in Fig 42, as indeed I have also the elevation of a half capital at large with its leaves raffled as those of Fig. 43.

The Composite Capital Explained. Fig. 58, Plate 58, Vol. 6, No. 2.

This order is called Composite because its capital is composed of the Ionic and Corinthian capitals; that is, its abacus, volutes, ovolo, and astragal between them are the very members which form the modern Ionic capital. Its two heights of leaves are the very same as those in the Corinthian capital, and its stalks, which, in the Corinthian capital, finish with volutes and helices, are here stopped by the Ionic volutes and made to finish inwardly with husks on tendrels called caulicole's.

The height of this capital is the same as that of the Corinthian, and is divided in seven parts also, of which the upper one is the height of the abacus, and which, being divided in two and the upper one in five, the upper four is the height of the ovolo, and the lower two of the fillet. Divide the lower half of the height of the abacus with the next two parts into one, and then finish the volute exactly the same as in the modern Ionic capital. Fig. 24.

Now, as the remaining part of this capital is entirely Corinthian, as before proved, 'tis needless to say more thereof; but that it may be fully exemplified, I have, therefore, shown its elevation at large in Fig. 59, Plate 58, and Fig. 60, Plate 59, in Vol. 6, No. 2, as well for a pilaster as for a column, as I have done before in the Corinthian order.

Chapter IV. Of Entablatures.

An entablature is the uppermost or last principal part of an order (which Vitruvius called ornament), and consists of three parts, viz., an architrave, a freeze or frize, and a cornice.

The heights of entablatures being declared, we are now to observe that their projections are equal to their heights in all the orders excepting the Doric, and that only, but when its mutuals are introduced, when it then consists of half the entablature's whole height.

The heights of the several entablatures are thus divided into their architraves, frizes, cornices, etc.

RULE I. To Divide the Tuscan Entablature Into its Architrave, Frize, Cornice, etc. Fig. 3, Plate 59, Vol. 5, No. 2.

First. Divide the given height into seven parts. Give two to the architrave, two to the frize, and three to the cornice.

Secondly. Divide the height of the architrave in seven parts. Give two to the lower fascia, four to the upper fascia, and one to the tenia, whose projection is equal to its height, and which, being divided in three, give one to the projection of the upper fascia.

Thirdly. Divide the height of the cornice in three; divide the upper one in four, and give the upper one part to the regula, and the other three to the cima recta. Divide the middle one in six; give the upper one to the fillet and the other five to the corona. Divide the lower one in two; give the upper one to the ovolo and the lower half divided in four, give the upper one to the fillet and the other three to the cavetto.

By the scale of projection is seen that the projection of the corona is two-thirds, the ovolo one-third, and the fillet of the cavetto one-sixth of the whole.

NOTE —By well understanding the manner of proportioning this entablature (which is very easy), the others following will become as easy. But that the young student may not be at any stand therein, I will, for a further explanation, explain the entablatures of the Doric and Ionic orders in the same manner.

RULE II. To Divide the Doric Entablature into its Architrave, Freeze, Cornice, etc. Fig. 12, Plate 65, Vol. 5, No. 3.

First. Divide the height in eight parts; give two to the architrave, three to the freeze, and three to the cornice.

Secondly. Divide the upper one of the architrave into three, and give the upper one to the tenia. Divide the lower two in six; give the upper one to the fillet over the guttas, and the next three to the guttas.

Divide the lower third part of the height of the cornice in three and give the lower one to the cap of the triglyph. Divide the remaining part of the cornice's height in four parts, and the upper one part in four, of which give the upper one to the regula or upper fillet on the cima recta, and the lower three to

the cima recta. The next part divided in three, half the upper one is the fillet, and the remainder the corona. The next part being also divided in three, the upper one is the capping of the mutule and the lower two the mutule. Lastly, the lower fourth part divided in three, the upper one is the depth of the ground to the mutules, and half the lower one is the fillet to the ovolo of the bed-mould.

The projection of this cornice, as before observed, is half the height of the whole entablature, and which, being divided in four, as on the cima recta, has the projections of its members determined, as by inspection is shown.

Now, 'tis to be noted that the breadth of a triglyph is always equal to half the column's diameter at its base; that its channelings and guttas are found by dividing the breadth of the triglyph into twelve parts, as exhibited at large in Fig. 13, Plate 65, Vol. 5, No. 3, that the distances between the triglyphs must always be equal to the height of the freeze, and therefore will become exactly square; that these intervals or squares are called metopes, and are sometimes enriched with roses, as here expressed, or otherwise, at the pleasure of the architect, and that the manner of forming the planceer of this cornice is shown in Fig. 14.

Rule III. To Divide the Ionic Entablatures Into the Architrave, Freeze, Cornice, etc.

As this order has two varieties of entablatures, viz., the one with dentules, and the other with modillions, I have therefore shown them both, and by explaining of one the other will be understood.

To Divide the Ionic Entablature With Dentules. Fig. 28, Plate 23, Vol. 6, No. 1.

First. Divide the height in ten parts; give three to the architrave, three to the freeze, and four to the cornice.

Secondly. Divide the upper one part of the architrave in four; give the upper one to the fillet; the next two and one-fourth of the lower one to the cima reversa, and the remaining three-fourths of the lower one to the bead. These members together are called the tenia of the architrave, whose fillet's projection is equal to their whole height.

Thirdly. As the freeze of this order is made swelling, therefore divide the height in four, and on the middle two make the section *x*, on which describe the curve of the freeze.

Fourthly. The height of the cornice being in four parts, divide the upper one in four; give the upper one to the regula or fillet on the cima recta; and the remaining two with two-thirds of the lower one to the cima recta, and the one-third give to the fillet on the cima reversa.

Divide the next part in four; give the upper one to the cima recta, and the other three to the corona.

Dive the next or third part in six; give the upper three to the ovolo; the next one to its fillet, and the next one to the fillet between the dentules.

Divide the lower one in three; the upper one will terminate the depth of the dentules. Divide the middle one in three and the upper one will be the depth of the denticule or fascia on which the dentules are fixed, and the remains will be the cima reversa and lower member of the entablature.

The projection is divided into four principal parts, as by the scale against the freeze is shown by which its members are terminated, as by inspection is plain.

To Divide the Ionic Dentules.

In an entablature over a column, divide the distance between the central line and the upright of the shaft at its neck into ten parts; give two parts to the breadth of a dentule and one to an interval. But in an entablature over an undiminished pilaster, divide the aforesaid distance into twelve parts and proceed as before.

Note.—The breadth of a dentule is five minutes, and of an interval two minutes and a half, which are described at large in Fig. 30, Plate 23, Vol. 6, No. 1.

Now, as the Ionic entablature with modillions, as expressed in Fig. 29, has it members proportioned in like manner, I therefore need only to note that the breadth of each modillion is ten minutes; that the distance or interval between them is twenty-five minutes in an entablature to a column and thirty minutes in an entablature to an undiminished pilaster, and that the curve of the sophete of the Ionic modillion is described at large in Fig. 30 as following:

The Height and Projecture Being Before Found.

Divide the length in six parts, and on the point 5 erect the perpendicular 5*a* equal to two parts and a half; also from the point 2 let fall the perpendicular 2*b*, equal to one part and a half, and draw the line *a b*. On the point 2 describe the arch 1*d*; on the point *b*, the arch *d c*, and on the point *a*, the arch *c*5.

Note.—The manner of forming the return of the planceer of this cornice is shown in Fig. 31.

Rule III. To divide the Corinthian entablature into its architrave, freeze, and cornice. Fig. 46, Plate 27, Vol. 6, No. 1.

1. Divide the height into ten parts; give three to the architrave, three to the freeze, and four to the cornice.

2. Divide the height of the architrave and of the cornice, each in five parts, and subdivide them as exhibited, and then proceed in every respect, as in the preceding orders.

Note.—That though the dentules are expressed in this cornice, yet they are not always used.

That the breadth of the modillions are ten minutes, as before in the Ionic, but their distances are greater.

The interval between modillions in a cornice over columns is twenty-five minutes, and in a cornice over undiminished pilasters thirty minutes.

To render the parts of this modillion plain and intelligible, I have shown it at large in front and profile, with its measures, in Fig. 47, Plate 27, Vol. 6, No. 1, wherein Fig. A represents the eye of its volute at large, with the centers numbered, on which its curves are described in the very same manner as the volute of the Ionic capital.

Between the modillions the planceer of the soffit of the Corona is enriched with roses in hollow panels called coffers, as expressed in Fig. 48, which also shows the manner of returning the soffiit at an external angle.

Rule IV. To Divide the Composite Entablature Into its Architrave, Freeze, and Cornice. Fig. 41, Plate 26, Vol. 6, No. 1.

First. Divide the height into ten parts; give three to the architrave, three to the freeze, and four to the cornice.

Secondly. Divide the height of the architrave and of the cornice each into four; subdivide their parts, draw in and terminate their members by the scale of projection as before done in the preceding orders. The manner of enriching the planceer of the corona of this cornice and returning it at an external angle is exhibited in Fig. 62, Plate 59, Vol. 6, No. 2.

Chapter V. Of Doors, Windows, Porticos, Arcades, and the Intercolumnation of Columns in General.

That the young student may have pleasure in the process of his study, I have given him an example of a door square and circular-headed, with circular and pitched pediments, a window, a portico, and and an arcade, with their imposts and architraves in each of the first four orders which immediately follow their respective entablatures, and which having their principal parts determined by their measures affixed, needs no other explanation. And in order to further enable him in the art of designing,

I have shown the proper intercolumnations, or just distances, that the columns of every order must be placed in from each other when employed in colonnade, etc., by which he may form new designs at his pleasure.

CHAPTER VI. OF PEDIMENTS AND THE MANNER OF FINDING THEIR RAKING AND RETURNED MOULDINGS FOR THEIR CORNICES, AND FOR CAPPING OF THEIR RAKING MUTULES AND MODILLIONS.

Pediments, which the French call frontons, from the Latin frons, the forehead, are commonly placed over windows, doors, porticos, etc., to carry off the rains, and to enrich the order on which they are placed.

Pediments are either entire or open, and those are straight, circular, compound, etc.

An entire straight pediment is generally called a pitched pediment, as the lower pediment in Fig. 69, Plate 87, Vol. 6, No. 3. An entire circular pediment is generally called a compass pediment, as the upper pediment in above figure.

When a pediment consists of more than one arch, as those in Figs. 71 and 72, Plates 87 and 88, Vol. 6, No. 3, they are called entire compound pediments.

Open pediments are those whose raking members are stopped in some certain place between the points of their spring and their fastigium or vertical point, as those in Fig. 63, Plate 59, Vol. 6, No. 2, the lower pediment in Fig. 71, Plate 87, Vol. 6, No. 3, and the upper in Fig. 74, Plate 88, Vol. 6, No. 3.

Entire pediments are the first kind that were made and were originally placed to porticos at the entrances into temples, but now we place them to frontispieces of doors, windows, etc., for ornaments and use.

As the entire pediment by its reclining surfaces carries off and discharges the rains at its extremes, therefore none but entire pediments should be employed abroad, whilst the broken or open are employed for ornament only within-side where no rains can come.

'Tis true we may daily see open pediments placed without-side, as is done by Inigo Jones, at Shaftsbury House in Aldersgate street, London. But surely nothing can be so absurd (unless it is the placing of an entire pediment within-side a building, where no rains can fall, as done by Mr. Gibbs within the Church of St. Mary le Strand), because, by their being open, they receive the rains and discharge them in front as a straight and level cornice doth, and therefore of no more use.

As pediments, when well applied, are very great enrichments to buildings and in many cases are very useful, I have therefore given fourteen varieties for the young student's practice, with their measures affixed, by which they may be drawn and worked of any magnitude required. See Fig. 69, Plate 87, Vol. 6, No. 3.

In the working of pediments the chief difficulty is to form the curves of the raking and returned cornices that shall exactly accadeer or meet at their mitres, which may be truly worked as following:

RULE. To Describe the Curve of the Raking Cima Recta of a Pediment Having the Curve of the Straight or Level Cornice Given. Fig. 65, Plate 60, Vol. 6, No. 2.

Let *a b g* be the given cima recta; divide its curve in four equal parts at the points *d e f* and draw the ordinates *i f*, *k e*, and also *g d*. From the points *d e f* draw the raking lines *f q*, *e r*, *d x*, and the perpendicular lines *d k*, *e l*, *f m*. In any place, as at *n o*, draw a right line at right angles to the raking lines, and making the ordinates in Fig. B, as *w q*, *n r*, *t s*, equal to the ordinates *i f*, *k e*, *g d*, in Fig. A, through the points *q r s*, trace the curve *p q r s n*, which is the curve of the raking cima recta required. And, tho' strictly speaking, each half is a part of an ellipsis; yet, if centers be found that shall describe the arch of a circle to pass through the three points *p q r* and *r s n*, it will not be in the power of the most inquisitive eye to discover the difference.

To Describe the Curve of the Returned Cornice.

From *p*, Fig. C, set back *p o*, the projection *b g* in Fig. A, and draw the perpendicular *o n* on the top of the fillet *p o*; make the distances *p t*, *t v*, *v w*, equal to the distances *b k*, *k l*, *l m*, in Fig. A, and drawing the lines *w x*, *v r*, *t g*, parallel to the perpendicular *o n*, they will cut the raking lines in the points *q r s x*. From the point *p*, thro' the said points to *n*, trace the curve *p q r s x*, which is the curve of the returned cima recta as required, for its ordinates at those points are equal to the ordinates in Fig. A.

By the same rule the curves of the raking and returned ovolos, Fig. 66, Plate 60, Vol. 6, No. 2; the raking and returned cavettos, same plate, Fig. 67, and the raking and returned cima reversa, for the capping of raking mutules and modillions, Fig. 68, Plate 87, Vol. 6, No. 3, are found, as is evident to the first view.

CHAPTER VII. OF BLOCK AND CANTALIVER CORNICES, RUSTIC QUOINS, CORNICES, AND COVES, PROPORTIONED TO ROOMS OF ANY HEIGHT, ANGLE-BRACKETS, MOULDINGS FOR TABERNACLE FRAMES, PANELS AND CENTERING FOR GROINS.

I. Of block cornices I have given three varieties in Fig. 75, Plate 88, Vol. 6, No. 3, where I have first shown them in small, to express the breadth of their block-trusses and distances at which they are to stand, as likewise the manner of applying them over rustic quoins; and, secondly, at large, the better to express the division of their members.

II. In Fig. 79, Plate 89, Vol. 6, No. 3, I have given an example of a cantaliver cornice at large, which in lofty rooms under a cove has a very grand and noble effect. The breadth of a cantaliver is one-fourth of its height, which is equal to the height of the freeze, and the distance they are placed at is the same as their height, thereby making their metopes exactly a geometrical square, as in the Doric order.

III. Coves to ceilings are of various heights, as one-third, one-fourth, one-fifth, one-sixth, two-sevenths, two-ninths, etc., of the whole height.

A cove of one third, as Fig. A (Fig. 81, Plate 90, Vol. 6, No. 3), is best for a lofty room, and when windows are made therein the groins make a very agreeable figure and take off the seeming heaviness which an entire cove of a large height imposes on the eye.

The curve of this cove *x h* is a quadrant of a circle described on the center *e*, as also is the curve *a e* of the same radius described on the center *b*. To find the center *b* after having set out the distances of the columns at nine diameters and a half and described the cove *x h* as aforesaid, make *d b* equal to *a d*.

A cove of one-fourth, as Fig. A (Fig. 79, Plate 89, Vol. 6, No. 3), is also fit for a lofty room, as a hall, salon, etc., which is thus proportioned. Divide the height in twenty parts; give five to the cove and two to the entablature.

To Describe an Angle-Bracket for Any Cove; Suppose for Fig. B.

Let *a b c* be a front bracket, and *a f* the base over which the angle-bracket is to stand. In C draw ordinates from its curve to its base *a n* at any distances, and continue them till they meet *a f*, the base of the angle-bracket, from whence raise ordinates at right angles to the said base, and making them respectively equal to those in Fig. C, through their extremes trace the curve *a n e*, which is one-quarter of an ellipsis, and the curve of the curve of the angle-bracket required.

A cove of one-fifth, as Fig. I (Fig. 79, Plate 89, Vol. 6, No. 3), is fit for a room of state, and thus proportioned, viz., divide the

height in five; give one to the cove and one-third of the next to the cornice which is Doric without mutules, and represented at large by Fig. H.

A cove of one-sixth, as the two coves in Fig. 80 Plate 90, Vol. 6, No. 3, is fit for dining-rooms, etc., and is thus proportioned: Divide the height in thirty parts; give five to the cove and one to the cornice.

A cove of two-sevenths, as Fig. B), Fig. 81, Plate 90, Vol. 6, No. 3), is fit for a study or bedchamber, and even for a hall, as herein expressed, and is thus proportioned: Divide the height in seven; give two to the cove and one to the entablature, which is Doric.

IV. In Fig. 76, Plate 89, Vol. 6, No. 3, I have shown how to proportion the Tuscan, Doric, Ionic, etc., cornices to the height of any room; a work known or at least practiced but by few.

(I) To proportion the Tuscan cornice to a room of any height.

Divide the height from the floor or dado in five, and the upper one in five; of which give three to the height of the cornice and two to the breadth of its stile and height of its rail. Fig. A.

(II) To proportion the Doric cornice to a room of any height. Fig. B.

Divide the height in four and the upper one in ten, of which give three to the height of the cornice and two to the breadth of its stile and height of its rail.

(III) To proportion the Ionic, Corinthian, or Composite cornices to the height of any room. Fig. C.

Divide the height in three and the upper one in five; of which give the upper one to the height of the cornice and three-fifths of the next one to the height of the rail and to the breadth of the stile.

V. In Fig. 77, Plate 89, Vol. 6, No. 3, I have given eight different mouldings for pannels, and in Fig. 78, Plate 89, Vol. 6, No. 3, four different mouldings for tabernacle frames with proper enrichments and their measures affixed, by which they may be drawn and worked of any magnitude required.

VI. In Fig. 82 I have shown the manner of finding the curves of the necessary ribs for groins by one general rule, as follows:

In Fig. A, let *a b c d* be the plan, and the semicircle *a c b* an end rib, and *c f* its height. Draw the diagonal *a d*, as also the ordinates 1 2 3 4 on the semicircle rib, which continue until they meet the diagonal in the points 5 6 7 8, from whence raise right lines perpendicular to *a d*, respectively equal to the ordinates 1 2 3 4, and then tracing the curve thro' their extremes, it will be the curve for the diagonal rib as required.

By the same rule the ribs for all other kinds of regular or irregular groins are found, be their plans what they will, and their arches semicircular, semielliptical, or scheme, as is evident by Figs. B C D E and F, which a little inspection will make evident to the meanest capacity.

THE END OF BUILDERS' JEWEL

FROM THE BUILDERS' CHEST-BOOK.

PREFACE TO THE READER.

THE following discourse, by way of dialogue, on the proportions of the five orders of columns in architecture, being written for the use of young students, as well as for the ease of those who are something advanced therein; I have, therefore, made choice of those beautiful proportions as were practiced by that grand architect, Palladio.

The measure by which I proportion their several parts is the diameter of the column at its base, divided into sixty equal parts, each of which I call a minute.

The method of setting of the projecture of the parts of an order from its upright, as practiced by Palladio, I do not follow, it being more difficult to the young student than to set them from the central line of the column, including the semidiameter thereof.

The diameter of a column divided, as aforesaid, I call a module, and use it as such throughout the five orders in general.

The following discourse consists of nine dialogues of architecture, wherein are very concisely and familiarly exhibited the several parts of a building, the etymology, characters, proportions, ornaments, and dispositions of the several orders.

The several parts, relating to materials and buildings in general, are digested into such a manner, as they ought to be read by every student herein.

And, although this small tract does not comprehend all the most useful parts of architecture, as perhaps it might have been expected to have done, yet there is not any one thing omitted as is necessary to a young student at his first setting out.

As to the other more important parts, I shall communicate them when my young student is well acquainted with these rudiments, or first and most necessary principles of architecture which ought to be often read and practiced before he proceeds any further, for indeed the chief motives of compiling this small discourse were for the improvement of youth, who at present, if strictly observed, are for the greatest part very ignorant of true proportions that are the fundamentals and very life of architecture.

And that what I assert may not appear as an untruth, let anyone as has judgment herein but observe the many preposterous structures carrying on and executed every day, and very often at a much greater expense to the builder or master than if they had been truly performed according to the beautiful proportions of architecture. 'Tis very observable that most of our young men of the building trade have more occasion to be bound apprentice when they have before served seven years, and are out of their time, than when they were first put apprentice the seven years before, for 'tis very rarely seen that few or any of them know more than jobbing work, and have heard of Palladio, Scamozzi, etc., but know nothing of their orders.

This very great ignorance among workmen is a great prejudice to everyone as employs them, as well as a great shame either to them or their masters to whom they were bound.

And, as there is nothing so commendable in youth as being ingenious and good workmen, and nothing so despisable as blockheads and bad workmen, 'tis therefor that I endeavor to explain the beauties of architecture, which will enable them to be of much greater service to themselves and families, as well as the commonwealth in general.

In the putting young men to masters there ought to be a very great regard had to their abilities, for when an ingenious boy is bound to a man who has the good fortune to have great plenty

of indifferent common business, his taste and genius to the trade is often ruined.

Therefore I advise that all parents have a very great regard to the character and knowledge of the masters to whom they bind their children, and that they do also covenant that they be carefully and truly taught the proportions and manner of working the five orders of columns in architecture, applied to practice in all such parts of a building as their trades doth belong to.

And although this advice will be rejected by some, yet for the general part, and especially the wise to whom I write, will commend and practice it, who in the end will find very great advantages thereby.

To consider of the many treatises of architecture as have been written by Vitruvius, Palladio, Scamozzi, Serlio, Vignola, and many other famous architects, would seem that what follows them would be needless. But, notwithstanding, that may be a general opinion, yet 'tis very plain that their rules and proportions being here explained in a manner more intelligible than that by them exhibited, 'twill prove a very great help to the young student and ripen his understanding therein much sooner than when he reads their rules, that are laid down after a very intricate, instead of an easy manner.

B. LANGLEY.

A COMPLETE KEY TO THE FIVE ORDERS OF ARCHITECTURE.

M. What is an architect?

P. A person skillful in the art of building.

M. How many principal parts is architecture divided into?

P. Three; civil, naval, and military.

M. What is civil architecture?

P. The art of building dwelling-houses, commodious habitations, public edifices, etc.

M. What is naval architecture?

P. The art of building ships and other vessels for war, commerce, etc.

M. What is military architecture?

P. The art of building fortifications or buildings of defense.

M. How many conditions does well building consist of?

P. Three; convenience, strength, and beauty.

M. What are the most commodious geometrical figures for plans of buildings?

P. The geometrical square and parallelogram.

M. Is not the triangle, pentagon, hexagon, etc., as proper figures for plans as the preceding?

P. No; except for military buildings where the bastions are laid out at the angles and the sides serve for curtains.

M. Why is the triangle, pentagon, hexagon, etc., improper plans for civil architecture?

P. For two reasons. First, because that a right angle is the strongest angle as can be made, of which the triangle, pentagon, etc., hath not any, but are either acute or obtuse angled, and therefore much weaker in their bondage; secondly, on account of the several inconveniences which attend those forms, in respect to light, irregular rooms, vacuities, etc.

M. Are, therefore, the several polygons to be wholly excluded in civil architecture?

P. No (and in particular the octagon); when applied to single rooms for banqueting, etc., such as that octagon room of the Hon. James Johnson at his seat in Twickenham, those polygons then are very beautiful and grand.

M. What is the reason why the circle is not made use of in private buildings?

P. Because the circular buildings are most chargeable, and much room is lost by the curvature of the walls.

M. In what kind of buildings is the circle to be used?

P. In cathedrals, temples, amphitheatres, etc.

M. Which of the preceding geometrical figures is the most commodious for private buildings?

P. The parallelogram.

M. What proportion is best for such a parallelogram?

P. That the depth consist of two-thirds of its length, and thereby the aspect will be grand and not diminished.

M. Under how many heads may all the parts of every fabric be comprised?

P. Five, as following: The foundation, the walls, the appertions or openings, the compartitions, and the roof and cover.

M. What method is to be taken in the foundations of buildings?

P. That they are perfectly sound and truly level.

M. What thickness is necessary for the foundation of buildings in general?

P. At least double to the dependant wall.

M. How many kinds of walls are in a building?

P. Two; the one entire and continual, the other intermitted.

M. What are the intermissions?

P. Columns, pilasters, or both.

M. What is most necessary to be observed in the building of walls?

P. That the materials be good; that the most heavy be laid at bottom; that they diminish in thickness proportionable to their height; that they be exactly perpendicular, and that the angles be firmly bound.

M. You were before saying that the intermission of walls are columns or pilasters; what is a column?

P. A column is a round pillar (composed of three parts, viz., its base, shaft, and capital) used in buildings for the support of entablatures, according to its respective order.

M. What is an entablature?

P. An ornament (according to Vitruvius and Vignola) consisting of the architrave, freeze, and cornice of any order.

M. What is a pilaster?

P. A pilaster is a square pillar, having its base and capital as the column in every respect, but doth not diminish upwards as a column doth, except it be placed with columns, and is different in all the orders.

M. How many orders are in civil architecture?

P. Five; of which three are Greek and two Latin.

M. What are the Greek orders?

P. The Doric, Ionic, and Corinthian.

M. What are the Latin orders?

P. The Tuscan and the Composite.

M. Is not there more orders than the preceding five?

P. Yes; the attic, the Persian, and the Caryatides.

M. What is the attic order?

P. An order consisting of pilasters with a cornice architraved only for its entablature.

M. What is the Persian order?

P. The Persian order is that which has slaves placed to support the entablature instead of columns.

M. What is the Caryatic order?

P. The same as the preceding, excepting that women are placed, as aforesaid, instead of men.

M. In what parts of a buildings are pilasters used?

P. To support the entablatures as before is said of columns, standing sometimes free and detached from the wall, but most commonly contiguous to it, or within it, so as not to show more than one-fourth or fifth part of its side.

M. What are the principal parts of an entire order?

P. The pedestal, column, and entablature.

M. What are the parts of a pedestal?

P. The base, the die or trunk, and the cornice.

M. What are the parts of a column?

P. The base, shaft, and capital.

M. What are the parts of an entablature?

P. The architrave, freeze, and cornice.

Of the Tuscan Order.

M. Why is the Tuscan order so called?

P. Because that the Asiatic Indians, who are said to have first peopled Italy, brought it into that part called Tuscany, whence the name is derived.

M. What is the principal character of the Tuscan order?

P. Simplicity, in respect to its plainness.

M. In what buildings is this order to be used?

P. Where strength and solidity is required, as amphitheatres, gates, magazines, prisons, bridges, etc., and for illustrious and majestic decorations, as the Trojans and Antoninus columns at Rome, and that of Theodosius at Constantinople.

M. In the preceding lecture you demonstrated to me that every order is composed of three principal parts, and every of those parts of three others, etc.; and I finding that every of those respective parts are composed of divers members, I desire that you demonstrate the number and name of every member respectively.

P. I will; and in order thereto, shall, throughout the whole demonstrations, make use of the several orders, as laid down by Palladio.

M. How many parts are in the Tuscan pedestal?

P. One only, viz., the zoccolo or die.

M. How came it to pass that Palladio did not give a base and capital to his Tuscan pedestal?

P. That thereby it might be the most plain and solid.

M. How many parts are in the base of the Tuscan column?

P. Three; viz., the cincture, the torus, and the plinth.

M. Is the cincture of the base of all or any of the other orders included in the base?

P. No; never, but in the Tuscan order.

M. What are the parts of the Tuscan column?

P. The shaft and capital.

M. How many parts are in the shaft?

P. Two; viz., the body and the astragal.

M. How many parts are in the capital?

P. Four; viz., the abacus, the ovolo or echinus, the annulet, and the hypotrachelium or freeze.

M. What are the parts of the entablature?

P. The architrave, freeze, and cornice.

M. How many parts or members are in the architrave?

P. Three; viz., two facias and the fillet.

M. How many parts or members are in the cornice?

P. Seven; viz., the list or fillet, the cima recta, the regular, the corona, the ovolo, the fillet, and the cavetto.

M. I observe that every member has its particular name; pray demonstrate the true exposition of each?

P. I will, and in order thereto, will begin at the pedestal, and proceed upwards, demonstrating every member in its place.

1. The zoccolo, from the Italian, a square body placed for the support of statues, vases, etc.

2. The plinth, from the Greek Plinthos, a square brick or table placed under the mouldings of the base of a column, pedestal, etc.

3. The torus, from the Greek Toros, a cable which its swelling something resembles, or rather from the Latin Torus, a bed.

4. The cincture, a fillet or list at the bottom of the column, from the Italian Listello, a girdle.

5. The shaft or fust, from the Latin Fustis, a club, which Vitruvius called scapus, is that part which is comprehended between the cincture and fillet.

6. The astragal, from the Greek Astragalos, the bone of the heel; 'tis that round moulding or collar as encompasses the upper part of the shaft. The Italians call it tondino, being like a torus.

7. The hypotrachelium, from the Greek, denoting the neck of the column; 'tis a kind of a freeze to the capital, and by some called the collar.

8. The annulet or ring placed under the ovolo or echinus, a Greek word signifying the shell of a chesnut, called by most workmen quarter round; 'tis oftentimes enriched with a carved ornament of eggs or hearts, with darts between, symbolizing love, etc., as in the capital of the Trajans column at Rome.

9. The abacus, from the Greek word abax, signifying in architecture that square piece, which crowns the capitals of columns as L.

10. Facias or fascias, or as some call it fasces from the Latin word fascia, a large turban; 'tis the band of an architrave, etc., which, when divided into two facias, as herein, the lowermost must ever be the narrowest, and the uppermost to finish with a cymatium inverted, or a fillet.

11. The freeze, from the Latin Phrygio, an embroiderer, or from the Italian Freggio, a fringed or embroidered belt; 'tis that member as separates the architrave from the cornice, which in all the orders, the Tuscan excepted, is commonly adorned with divers enrichments, as the Doric with its triglyphs, the Ionic with its festoons, etc. Sometimes the freeze is called Zophorus, from the Greek Zoophoros, it being usually enriched with the representations of animals.

12. The cavetto, from the Latin Cavus, a hollow, being the fourth of a circle.

13. The list or fillet and ovolo, are already explained in the eighth article hereof.

14. The corona, by some called supercilium, or rather stillicidium, the drip; 'tis a considerable member, being not only as 'twere a crown to the whole, but defends all the rest of the edifice from rain, bad weather, etc., and, therefore, has its projecture proportionably. The inward and outward curvature of an arch, vault, etc., is also called corona. The under part of coronas are called planceers, and by the Italians, soffito, generally enriched with modillions, and between them roses, pomgranates, frets, etc.

15. The regula called also listello, cincta, etc., is a member which separates the corona and cima recta.

16. The cima recta, or cymaise, from the Greek Kymation, a wave, called by English workmen ogee, which is of two kinds; viz., cima recta, called by workmen the fore ogee, as W, and cima reverse, or the back ogee, whose beauty consists in having its height and projecture equal to each other.

M. These parts thus explained I well understand: I now desire that you, in the like manner, explicate the principal parts of a column, as the pedestal, column, and entablature.

P. First. A pedestal is composed of three parts; viz., its base, die, or trunk, and the cornice; 'tis a square body serving as a foot for the column to stand upon, whose height, according to Vignola, is one-third part of the height of its column. Pedestals differ in different orders and are sometimes called stereobate or stylobatae, from the Greek Stylobates, the base of a column.

Secondly. Column, from the Latin Columna, a support, is divided into its base, shaft, and capital (as is said before); the base of a column (from the Greek Basis, a rest or support) is that part as bears up the shaft; the capital of a column is the upper part thereof, from the Latin Caput, the head or top, and is that part on which the architrave is placed. Such capitals as have no ornaments, as the Tuscan and Doric, are called capitals with mouldings; and the other, as the Ionic, Corinthian, and Composite, capitals with sculptures.

Lastly. Entablature, from the Latin Tabulatum, a ceiling. For originally the frieze was formed by the ends of the joist, that rested upon the architrave, which is the principal beam and first member of the entablature, that bears upon the capital of the column. The word is from the Greek, Archos, Chief, and Latin,

Trabs, a beam. By some architects 'tis called epistyle (Greek) epi, upon, and stylos a column. The frieze is already explained, and therefore shall proceed to the cornice (from the Latin, coronis, a crowning), the third and uppermost part of the entablature.

M. By what measure is the parts of a column measured?

P. The diameter of the column at its base divided into 60 equal parts, called minutes, and the whole diameter, so divided, is called a module.

M. How many modules in height is contained in the Tuscan column and its entablature?

P. The height of the Tuscan column, exclusive of its base and capital, is six modules, and with them seven, each being equal to half a module, and the height of the entablature, is equal to one-fourth of the column including the base and capital.

M. What diminution hath the shaft of the Tuscan column?

P. Fifteen minutes, or one-fourth part of its diameter at the base.

M. Is the Tuscan column ever fluted as others are?

P. No; its plainness strictly forbids it.

M. What is the intercolumnation of columns?

P. Intercolumnation, from Latin intercolumnium, is the distance between two columns, which in the Doric order is regulated according to the nature of its ornaments in the frieze; but in the Tuscan, Ionic, Corinthian, and Composite orders, the intercolumnation is of five different kinds, as:

First. Aræostyle, from the Greek Aracos, rare, and Stylos, a column; by which Vitruvius signified the greatest distance which can be made between the columns, consisting of four modules or diameters of the column, belonging to the Tuscan order, to be practiced at the entrance of cities, forts, etc.

Secondly. Diastylos, from the Greek Dia, between, and Stylos, column, an intercolumnation of three diameters most natural to the Doric, and of four to the Ionic, to be used for gates, galleries, porches, frontispieces, etc.

Thirdly. Systylos, called pienostyle, thick of pillars, an intercolumnation, as doth not exceed one diameter and half, belonging chiefly to the Composite, to be used before temples and other magnificent works.

Fourthly. Eustylos, from the Greek Eus, well, and Stylos, a column, an intercolumnation of two diameters or very little more, proper for the Ionick and Corinthian, being of all other the most graceful. Vitruvius allowed this intercolumniation two diameters and a quarter, maintaining it to be the best manner of placing columns with regard to their distance.

OF THE DORIC ORDER.

M. Why is the Doric order so called?

P. Because that Dorus, king of Achasis, built a magnificent temple to the goddess Juno, in the city of Argos, which, Vitruvius saith, was the first model of this order.

M. What is the principal character of this order?

P. Solidity and beauty.

M. In what buildings is this order to be used?

P. Where strength and grandeur is required as in ports of citadels, outside of temples, churches, theatres, triumphant arches, etc.

M. Is there not a particular method to be observed in this and all other orders, to make them appear grand and noble?

P. Yes; by observing that the division of the principal parts of the order, consist but of few members, and thereby they will be grand and of a noble aspect?

M. Why have few and large mouldings a better aspect or effect in massy buildings, than when they are many and small?

P. Because that small ornaments do divide and scatter the angles of sight in so many rays pressed together, that the whole appears but a confusion.

M. What were the ancient principal parts of this order?

P. Two only; viz., the column and entablature.

M. Had not this order anciently a pedestal as now it has?

P. No; nor even a base to the shaft of its column, for in the fairest works of antiquity, as the theatre of Marcellus at Rome, that at Vicenza, and many others in which this order has been employed, 'twas found without bases.

M. What do you suppose to be the reason that the ancients did not allow a base to the Doric order?

P. Because that its aspect is robust and strong, like unto that of Hercules, who is always represented on his bare feet.

M. And therefore must this order be always used without a base?

P. No; for the modern architects have given it that base which Vitruvius calls attic.

M. What is the attic base composed of?

P. Plinth, two toruses, and scotia with its fillets.

M. What do you mean by the word scotia?

P. Scotia (Greek) Skotos, darkness, called by some trochilus from the Greek trochilos, a pully; 'tis a hollow moulding between the tores of a base.

M. What is the height of the Doric column including its base and capital?

P. Eight diameters when set alone, and seven when set in porticos, etc.

M. What is the height of the attic base?

P. Half the diameter or thirty minutes precisely.

M. Is the capital of the same height also?

P. Yes.

M. What are the parts of the Doric capital?

P. Its abacus, ovolo, annulets, and hypotrachelium.

M. Is not the astragal and its list a part of the capital?

P. No; they are a part of the shaft or column.

M. How many parts is the Doric column composed of?

P. Four; viz., the astragal and its fillet or list, the shaft and the cincture.

M. Has the Doric column any ornament more than its base, shaft, and capital?

P. Yes; its flutings, called by the French Cannelures, and by others Striures, from Striges, folds of a garment, which Vitruvius says they were at first designed to represent.

M. What number of flutes is in the circumference of a Doric column?

P. Twenty.

M. Are there as many in a Doric pilaster?

P. Yes; a Doric pillaster (as well as the Ionic, Corinthian, and Composite) ought to have seven flutes in each face.

M. What do you call those spaces between the flutings?

P. Striæ, lists or fillets.

M. What proportion doth those fillets bear to the flutes?

P. One-third part of the breadth of a flute.

M. Are columns ever fluted without fillets?

P. Yes; frequently in the Doric order, but no other.

M. What depth are the flutes to be cut?

P. About one-third of their breadth. Some are made half their breadth.

M. I have observed in columns that their flutings have been filled up with a swelling a third part of the column's height from the base, pray tell me what you call them?

P. Such columns, whose flutes are so filled, are called staved or cabled columns.

M. Now let's return to the entablature of this order, and first explain the architrave.

P. The architrave of this order ought to be solid and substantial, and never to have more than two facias, with its tenia or band which crowns it.

M. Is there never any other ornament to the Doric architrave?

P. Yes; when the frieze is enriched with its triglyphs.

M. What are those ornaments?

P. Guttæ or drops, placed under the tenia, in such manner, as if they had flowed from the channels of the triglyph through the tenia, and small fillet or moulding under it.

M. How many of those guttæ or drops are placed under each triglyph?

P. Six; which are made flat as a triangle, or round like a cone cut from the vertex, perpendicularly to its base.

M. Are these guttæ or drops ever used in any other part of this order?

P. Yes; in the planceer of the corona and modilions, and are thirty-six in number.

M. What are the ornaments of the frieze?

P. Its triglyphes and metops.

M. Pray explain them.

P. 1. A triglyph, in Greek signifies a three sculptured piece, quasi tres habens glyphas, was first used in the Delphic Temple, representing an antick lyre, of which instrument Apollo had been the inventor; the Italians call them planetti, small plains. Their breadth is always equal to half the diameter of the column, or thirty minutes, and height to the height of the freeze, being crowned with part of the upper tenia R. The two angular hollows, being but half channelled, are therefore called semi-calicula.

2. Metops, from the Greek, Metope, Meta, and Ope between three, is the square space in the freeze, between the triglyphs, which was anciently adorned with ox's skulls, instruments used in sacrificing, etc.; but now, most properly with fruit, flowers, etc., when introduced in gardens or with the arms of the gentlemen to whom the building belongs.

M. What is the chief thing to be observed in metops?

P. That they be truly square.

M. What are the parts of the Doric cornice?

P. The cavetto, the Ovale, the corona, the cima recta, and inverta, whose total are five.

M. Pray explain the five parts of the cornice?

P. I will. First. The cima recta.

Secondly. The cima inverta, or inversa, is of the same resemblance of the rolling wave, as in cima recta, a wave ready to fall with its hollow part resting upon the corona at one extreme, and as if 'twere just falling from cima recta with the other. The corono is already explained, as also is cima reversa, and cima recta.

M. Is not the character of this cornice threefold?

P. Yes; there is one very plain, as that of Palladio, Serlio, Bullant, Cataneo, Barbaro, and De Lorme, who uses neither Mutules nor Dentels.

Secondly. There is another more compounded, having Dentils, as at the theatre of Marcellus at Rome, that of Scamozzi and Vignola.

Lastly. When mutules are used without dentils. The ornaments of this cornice being thirty-six drops (or bells) cut under each mutule, should be shaped like small cones, whose points or tops are sunk into the under bed of the mutule or corona.

M. I find by the preceding, that mutules and dentils are often used, pray explain to me what mutules and dentiles are?

P. I will; Mutuli (from the Latin) is a little inverted console under the soffit, by us called modillion, which always ought to correspond with the middle of the columns.

These modilions are particularly affected to the Corinthian order, where they are always adorned with carved works, etc. In the Doric, Ionic, and Composite they are more plain, having seldom any enrichment, excepting a single leaf underneath.

Secondly. Denticles (a member of the cornice) immediately above the cymatium of the freeze, cut after the manner of teeth. These are now particularly affected in the Dorick order, notwithstanding that anciently they were not admitted therein. The square member, whereon they are cut, is called the denticule, and in Latin denticulus.

Of the Ionic Order.

M. Why is the Ionic order so called?

P. Because it was first invented by Ion, in Ionia, a province in Asia, who is said to have erected a temple of this order to the goddess Diana.

M. What doth the Ionic order represent?

P. A kind of feminine slenderness, not like a light housewife, says Vitruvius, but in a decent dress has much of the matron.

M. I observe that the Ionic base differs from the Doric base in the upper part thereof, I desire that you explain the parts of that base.

P. I will; first the plinth, the lower torus, the scotia, and upper torus, are already explainted in the Doric order, and the astragal, completes the whole base, as required.

M. I understand your demonstrations very plainly; pray go through the whole order in the same manner.

P. I will; and begin with the capital, and so proceed to the upper part of the cornice.

First. The capital, which is composed of three parts, viz., the abacus, the voluta, and the ovolo.

Secondly. The architrave, composed of four parts, viz., the cima reverse, and first fascia, the second fascia, and the third fascia.

Thirdly. The frieze.

Fourthly. The cornice composed of six parts, viz., the cavetto, the ovolo, the modillions, the corona, the cima reversa, and the cima recta.

M. Is this column ever fluted?

P. Most sure; 'tis from this order that the flutings first were taken, and was originally made to represent the folds of garments.

M. How are these flutings described on the basis of a column?

P. Divide the circumference of the base into twenty-four equal parts, and each of those parts into four smaller. Give to each flute three of those small parts, and to each fillet one, the depth of each flute must not exceed above one-third of its breadth.

Of The Corinthian Order.

M. Why is the Corinthian order so called?

P. Because it was first designed by an architect of Athens, and executed at Corinth, from whence it had its original and name of Corinthian order.

M. Is this order ever fluted?

P. Yes, very often; more frequent than the Ionic.

M. How many flutes are generally allowed to this order?

P. Twenty-four, as in the Ionic, and sometimes, according to the compass and station of the column, the flutes may be augmented to thirty.

M. What are the parts of the Corinthian base?

P. The plinth, the lower torus, the astragal, the scotia, the upper torus, and the astragal.

M. Pray go through the remaining part of the order?

P. I will. First. The capital, whose leaves are the acanthus or branca Ursina, bear's foot, first invented by Callimachus, an ingenious statuary of Athens upon seeing this plant spreading itself around a basket, that had been placed upon the tomb of a young Corinthian lady, and covered up with a tile. The leaves he imitated in his scrolls or volutes, the basket in the vase or tambour, and the tile or covering in the abacus.

Secondly. The architrave, composed of four parts; viz., cima reversa, and three facias.

Thirdly. The frieze, generally adorned with all kinds of figures and various compartments at pleasure.

Lastly. The cornice wherein are both dentelli and modillions, called by our workmen teeth and cartouzes, consisting of seven parts; viz., the cima or cavetto, the dentils, the ovolo, the cimasium and modillions, the corona, the cima reversa, and the cima recta.

OF THE COMPOSITE ORDER.

M. Why is the Composite order so called?

P. Because 'tis composed of the Ionic and Corinthian orders, and not a complete order of itself; 'tis of Roman extraction, and by many is called the Roman order, and by some the Italian order.

M. What are the parts of the composite base?

P. Six; the plinth, the lower torus, the astragal, the scotia, the upper torus, and the astragal.

M. Pray go through the whole order in like manner?

P. I will. First. The capital composed of two rows of leaves, proper to the Corinthian and the volutes of the Ionic.

Secondly. The architrave, composed of three parts; viz., the cimasium and two facias.

Thirdly. The frieze.

Lastly. The cornice, which is composed of seven parts; viz., the cima or cavetto, the lower part of the modillion, the upper part of the modillions, the cimasium, the corono, the cima reversa, and the cima recta.

M. You having thus demonstrated all the several parts belonging to the five orders in architecture, pray now show me how to draw or delineate an entire order in architecture.

P. I will; but before we can come to the practice, I must teach you a few geometrical problems.

P. I must first remind you what is meant by modules and minutes, although I have said some thing thereof already; also what is meant by height and projecture of any member, etc.

First. A module is the diameter of a column at its base, divided into sixty equal parts, called minutes.

Secondly. The height of a moulding is the thickness as is contained between one and the other moulding.

Thirdly. Projecture signifies the prominency or embossment, which the mouldings have, beyond the naked of the wall, which is always in proportion to its height, and herein you must note that I set off all my projectures from the central line of the column, and not from the upright or face of the column as many do.

M. Which of the five orders shall we begin with?

P. The Doric.

M. What is the first work to be done?

P. To make your module to work by; to divide a right line into any number of equal parts.

M. Of what dimensions ought this module to be?

P. Let it be divided into sixty equal parts or minutes.

M. I observe in the five orders that at the end or projection of every member there be figures placed, as also between the mouldings at the back side; pray what do those figures signify?

P. Those figures placed at the extremes of the mouldings represent the number of minutes as those mouldings project from the central line of the column, and the other figures between the mouldings at the back side represent the number of minutes as every member is in height. But to make the thing more plain, I will draw an entire order, and for that purpose I make choice of the attic base with the Doric order.

M. Pray now, how do you describe the triglyphs of the Doric order?

P. I will show you immediately; this ornament is very rarely used in any order besides the Doric, and its situation is always in the frieze, placed exactly over the middle of the column, its height is always the same of the freeze, and its breadth is always equal to thirty minutes; every triglyph is divided into seven parts, viz., two entire glyphs or channels, two semi-glyphs, and three spaces or interstices.

'Tis here to be observed, also, that evey triglyph must be divided into twelve equal parts, of which every entire channel, as well as the spaces between, lays claim to two-twelfths each, and the semichannel at the extremes but to one-twelfth. When an entablature is adorned with its triglyphs, the square spaces between are called metopes, as is said before, which must always be exactly square, and from hence it happens that in many buildings the triglyphs can not be introduced.

Of the Proportion, Diminution, and Intercolumnation of the Five Orders of Columns in Architecture.

First. The Tuscan column, including its base and capital, is equal to seven diameters in height, and its entablature to one-fourth part thereof. When it hath a pedestal given it, its height is equal to two diameters.

The diminution of its shaft at the astragal is one-fourth of its diameter at the base.

The intercolumnation may be very large where 'tis required, because the architrave is commonly made of wood, but the most usual intercolumnation is four diameters of the shaft's base.

Secondly. The Doric column, its height including the base and capital, is eight diameters when alone, but when in porticoes, etc., but seven diameters; the height of the capital is always equal to thirty minutes, as also is the base.

The base generally used to this order is the Attic, for of itself it originally had no base, as may be seen by the profiles of the Bath of Dioclesian, the Theatre of Marcellus, etc., at Rome.

The entablature is commonly two diameters in height, and is very often adorned in the freeze with triglyphs and metops, and, as I observed before that anciently this order had no base, so 'tis to be understood of a pedestal, so that when a pedestal is introduced, Palladio allows two diameters and one-third for its height.

The diminution of the shaft at the astragal is equal to one-fifth of the shaft's base, and the intercolumnation is of three diameters, excepting when the distribution of the ornaments in the freeze require little more or less.

Thirdly. The Ionic column, its height including base and capital, was anciently but eight diameters, which the modern architects thought too little, and therefore they added one diameter more to give it proper stature, so that its height is nine diameters. The height of the entablature is equal to one-fifth of the column, and its cornice is sometimes enriched with denticules.

The diminution of the shaft at the astragal is one-sixth part of its base. The height of the pedestal is two diameters and two-thirds, and its intercolumnation two diameters and one-fourth, called by Vitruvius, Eustillos, as being the best kind of intercolumnation.

Fourthly. The Corinthian column, its height including base and capital is nine diameters and half, sometimes nine and three-quarters, and oftentimes ten diameters. The height of the capital is seventy minutes, of which the abacus must be a sixth or a seventh part, and the remaining part being divided into three equal parts, the two lowermost gives the height of the first and second toure of leaves, and the third or uppermost part being divided into two equal parts, the lower part of the two shall be for the caulicula, and the upper the extremes of the voluta's. The entablature's height of the pedestal one-fourth of the column. The diminution of the shaft at the astragal is one-seventh of its base, and its intercolumnation is two diameters and quarter as in the Ionic.

Fifthly. The Composite column, its height including base and capital is ten diameters, and the height of the entablature is one-fourth or one-fifth thereof; its diminution at the astragal is one-

eighth part of its base, and the pedestal's height is commonly equal to one-third of the column's height. The base to this order; is either Attic entirely or a compound of the Ionic and Attic the intercolumnation of this order is one diameter and half, and sometimes one diameter and three-quarters.

M. Pray now, how do you do to proportionate an order to any height, and to find the module or diameter of the column to work by?

P. First. Your order being agreed on you must account how many minutes are contained in the height of the column and its entablature, then divide the height of your room, etc., into as many equal parts as there are minutes in the height of your order, and taking sixty of those parts that shall be the diameter of your column and module to work by. The minutes contained in the height of the Tuscan entablature, is one hundred and four; in the Doric one hundred and thirteen; in the Ionic one hundred and nine; in the Cŏrinthian one hundred and fourteen, and in the Composite one hundred and twenty.

I shall now proceed to demonstrate to you the proportions that all sorts of rooms in a building ought to bear one to another in regard to their length, breadth, and height, as also of gates, doors, windows, etc.

Of Galleries.

M. What proportion should the length of a gallery have to its breadth?

P. Not less than five times its breadth, nor more than eight.

M. What height ought galleries to have?

P. Their height ought to be equal to their breadth.

M. What is the best aspect for galleries?

P. The north, because its light is best for paintings, etc., which they are generally adorned with.

M. Is it not possible to make galleries too narrow or too wide?

P. Yes, and therefore their breadth should never be less than sixteen feet, nor to exceed twenty-four feet.

Of Halls.

M. What is to be observed in the proportion of halls?

P. That their lenghth be not less than twice their breadth, nor to exceed three times.

M. Of what height must halls be?

P. If their ceilings are flat, their height may be two-thirds their breadth, and if the ceiling be arched, the height may be five-sixths of its breadth.

Of Chambers.

M. What situation is best for Chambers of Delight?

P. The east, provided that any other hath not a better prospect.

M. What proportion ought a good lodging-chamber to have?

P. That its length be never more than its breadth and half breadth, not less than the breadth itself, viz, exactly square.

M. Of what height ought chambers to be?

P. The height of chambers of the first story not less than ⅔ of their breadth, the second story 11-12 of the first, and the third story ¾ of the second.

Of Inner-Doors.

M. Of what breadth may doors be made in large buildings?

P. Doors in large buildings must be always in proportion to the place wherein they stand, their breadth must not be less than three feet nor more than six feet, and their height always equal (at least) to double their breadth or two diameters; inner-doors in small buildings must never be less than two feet and half in breadth, and in height six feet, as Palladio observes, but he means an Italian foot about fourteen inches of English measure.

Of Windows.

M. What are the principal things to be observed in windows?

P. First, their magnitude.

Secondly, their number; and

Thirdly, the bigness of the room that they are to enlighten, for it is possible to make rooms as well too light as too dark. The height of windows of the first story may be two diameters, and where necessary, two diameters ¼, ⅓, or ½. The height of windows in the second and third stories to be in the same proportion as that of chambers.

Of the Placing of Doors and Windows.

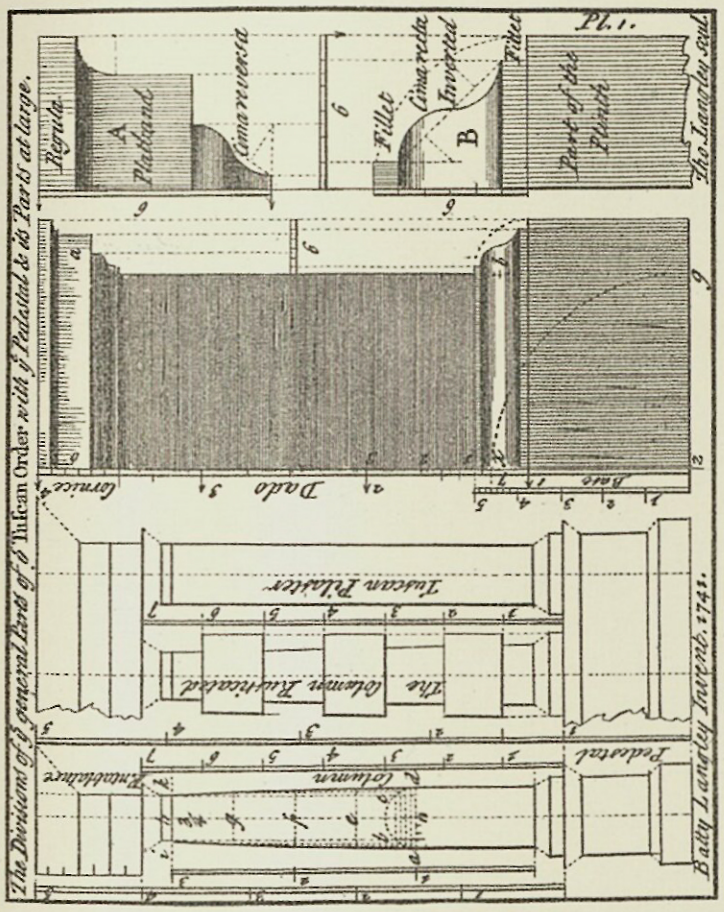
First. Let all the doors (if possible) be placed right opposite against one another so that a clear view may be had throughout the whole house, which is both graceful and convenient.

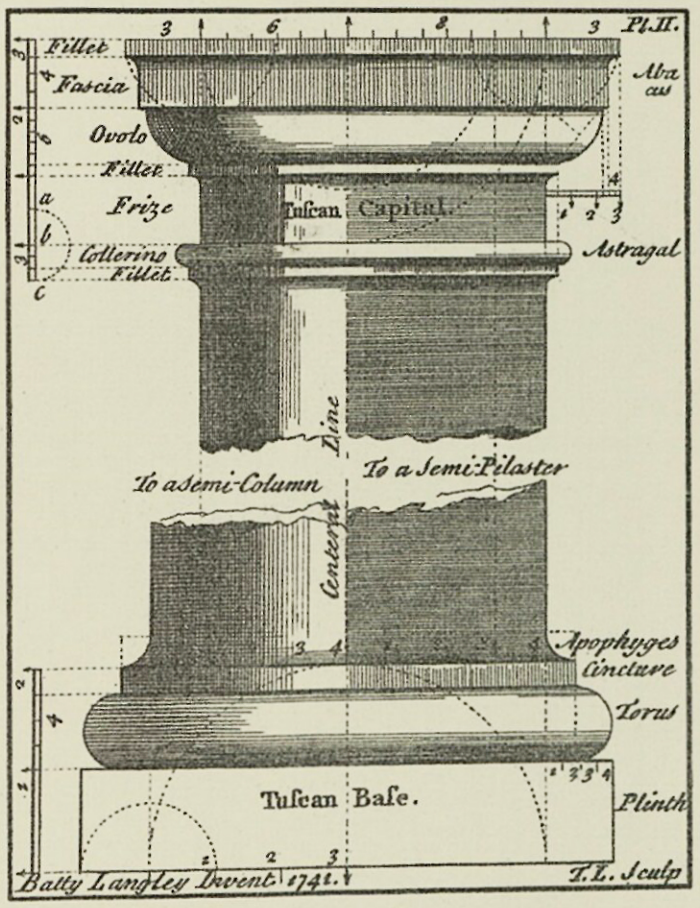
Secondly. Place your windows in such order that those on the right of the door be equal to those on the left, and those in the stories above to be directly over those below.

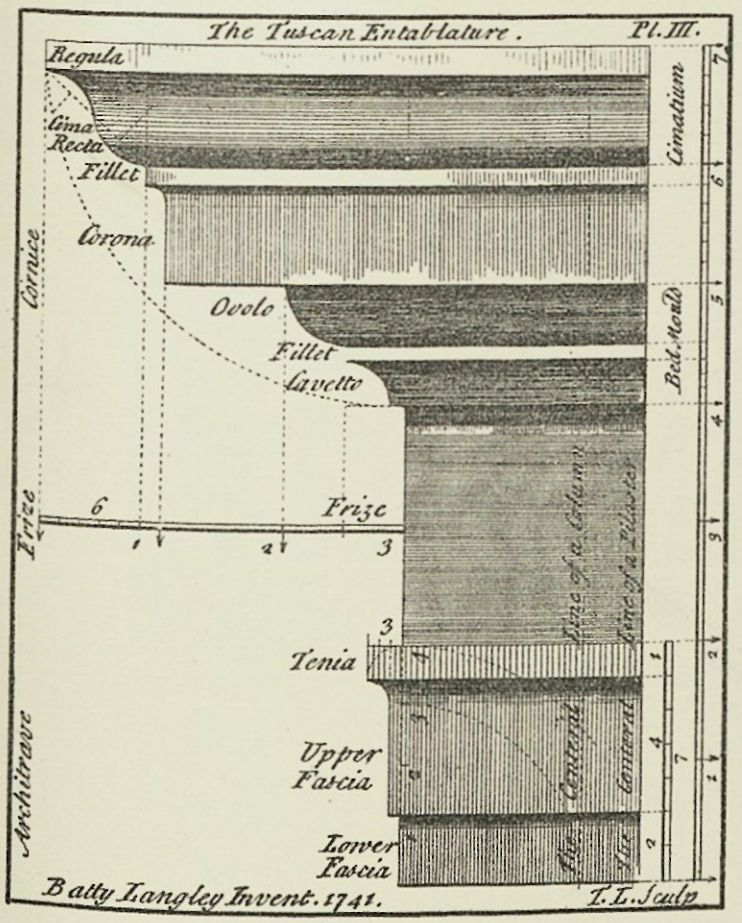
Thirdly. 'Tis of great service as well as ornament to turn arches over doors and windows to discharge the weight as lies over them.

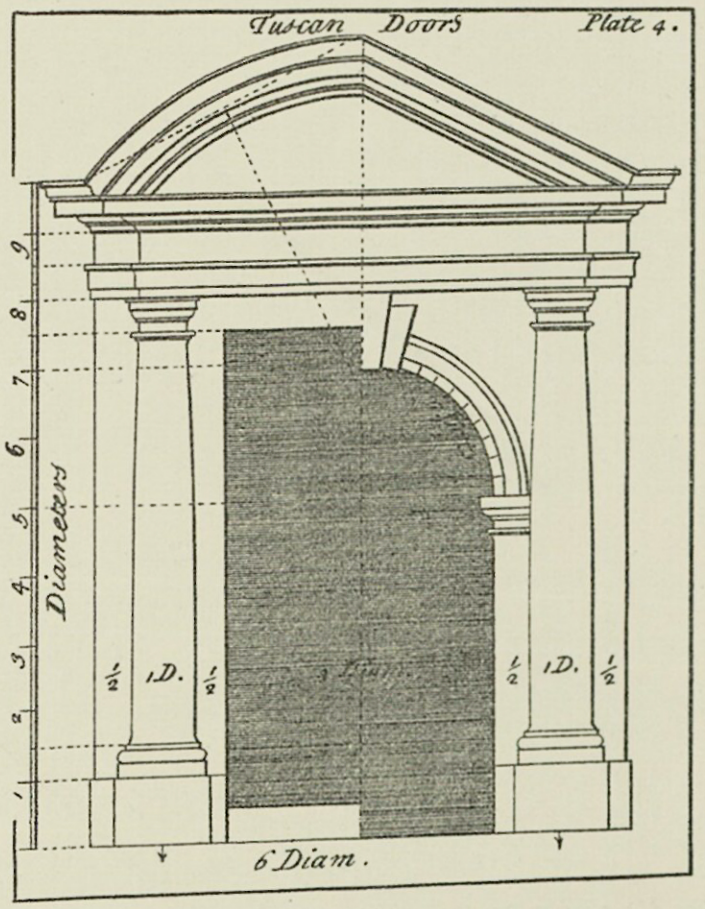
Lastly. Suffer not windows to be placed too near the angles of a building, but leave the coyn as large as may be with conveniency, for those coyns are the very nerves and support of the whole building.

FINIS





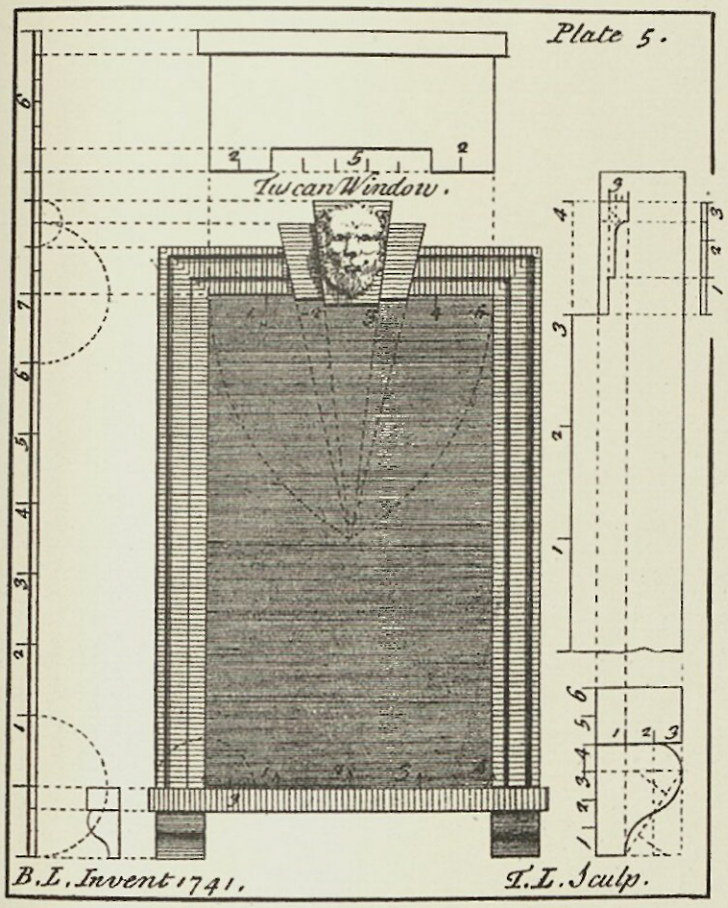


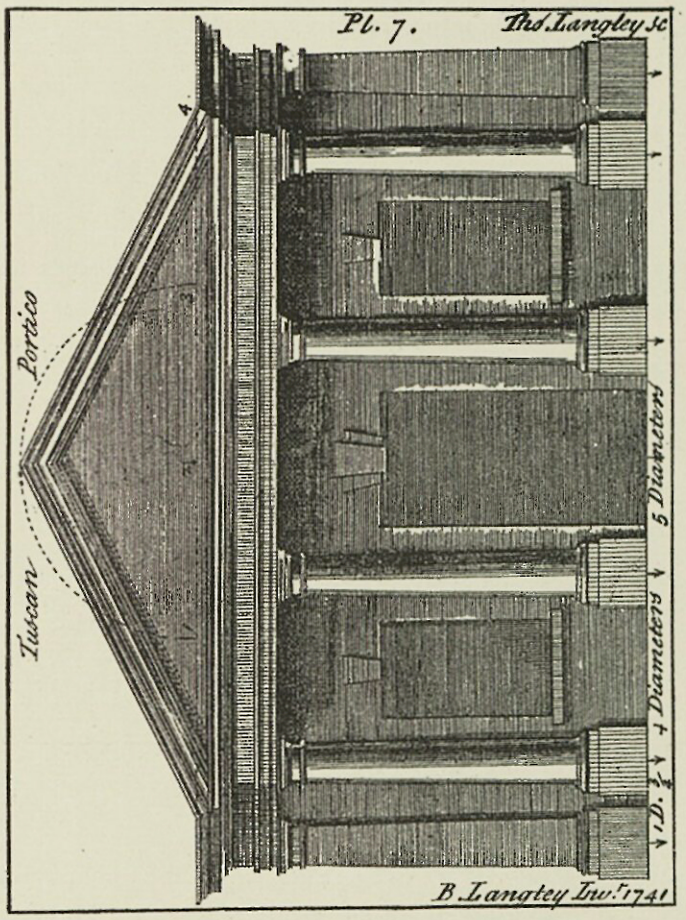


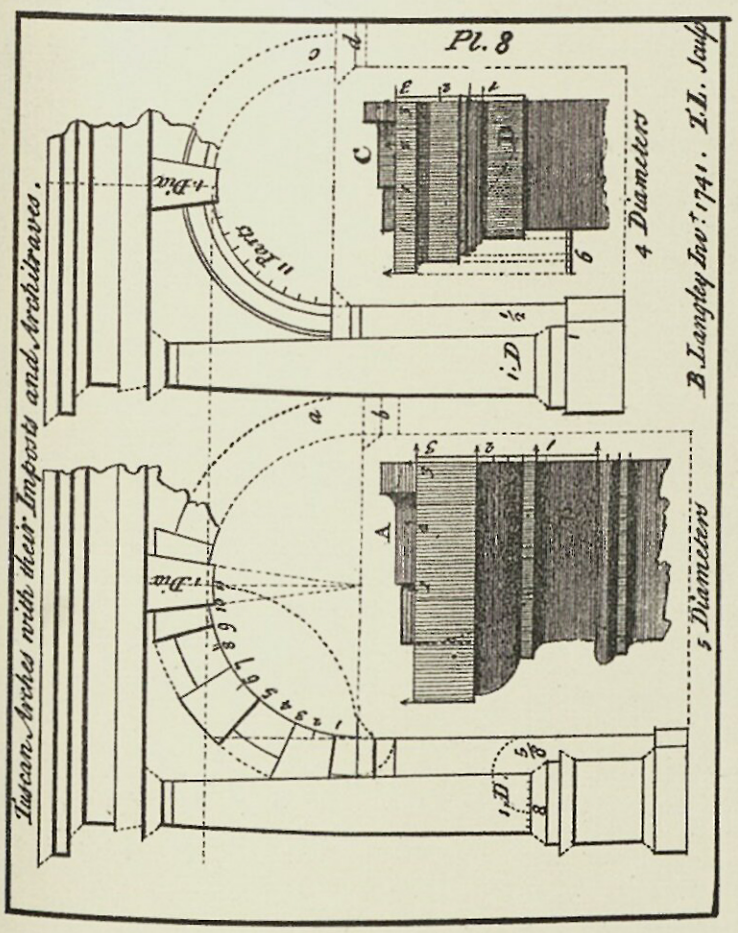
Plates 1.2.3.4.

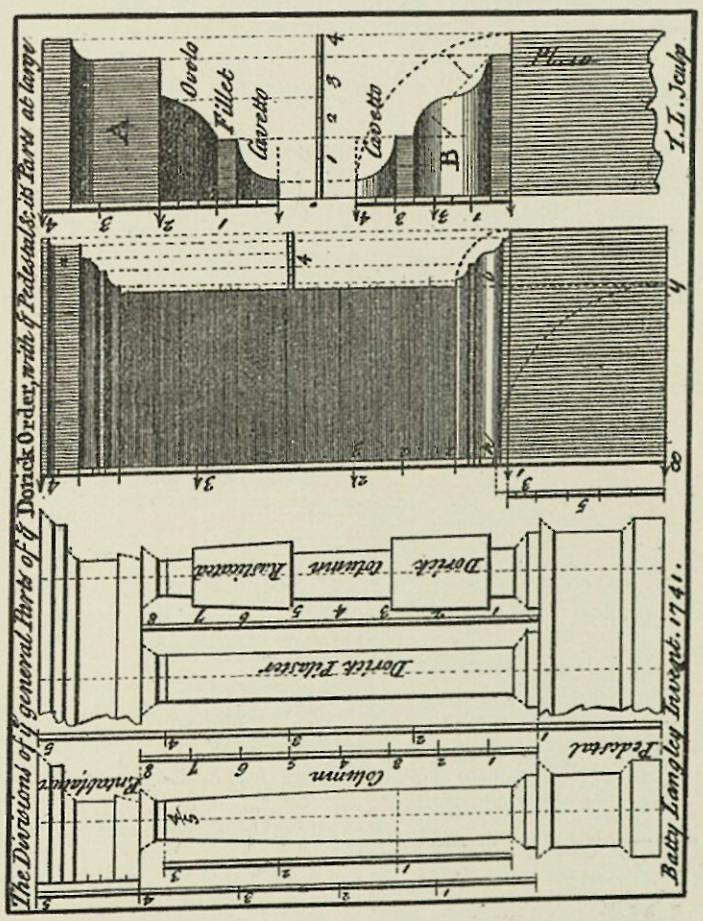
From Batty Langley.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.





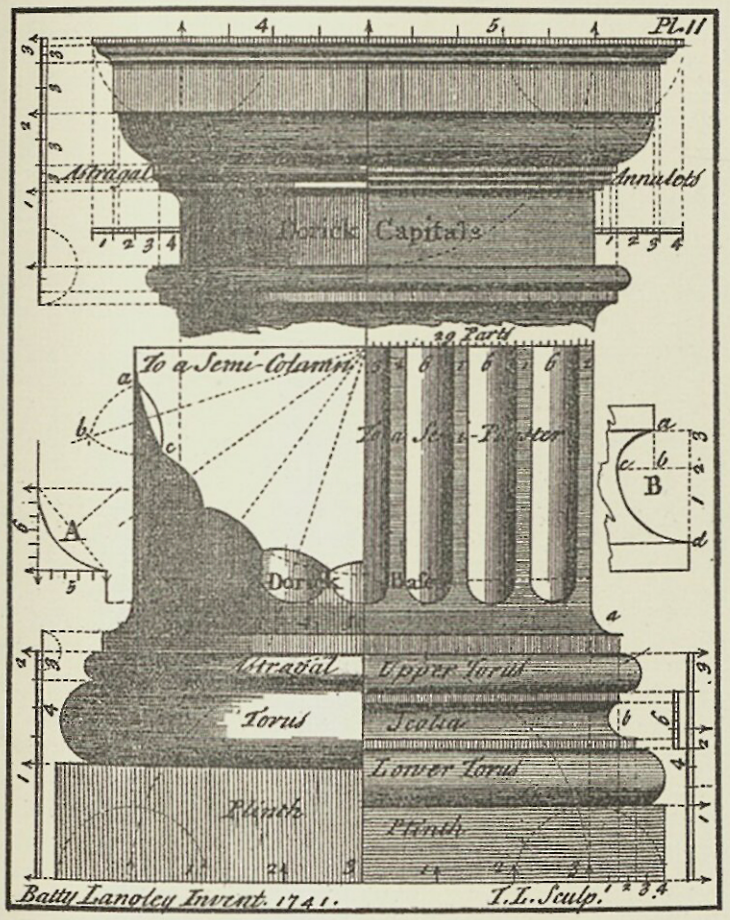


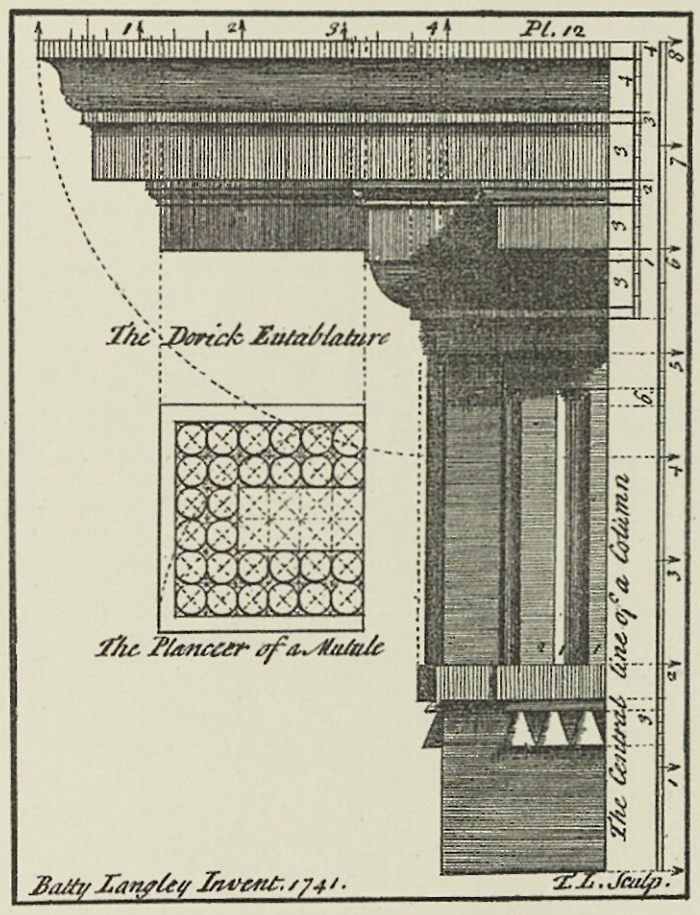


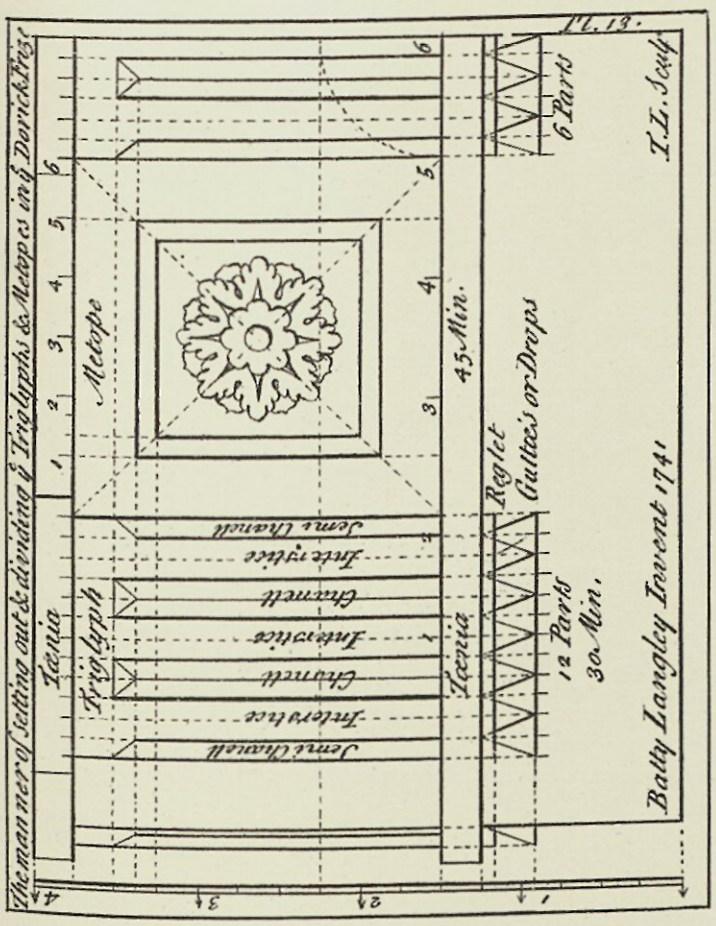
FROM BATTY LANGLEY.

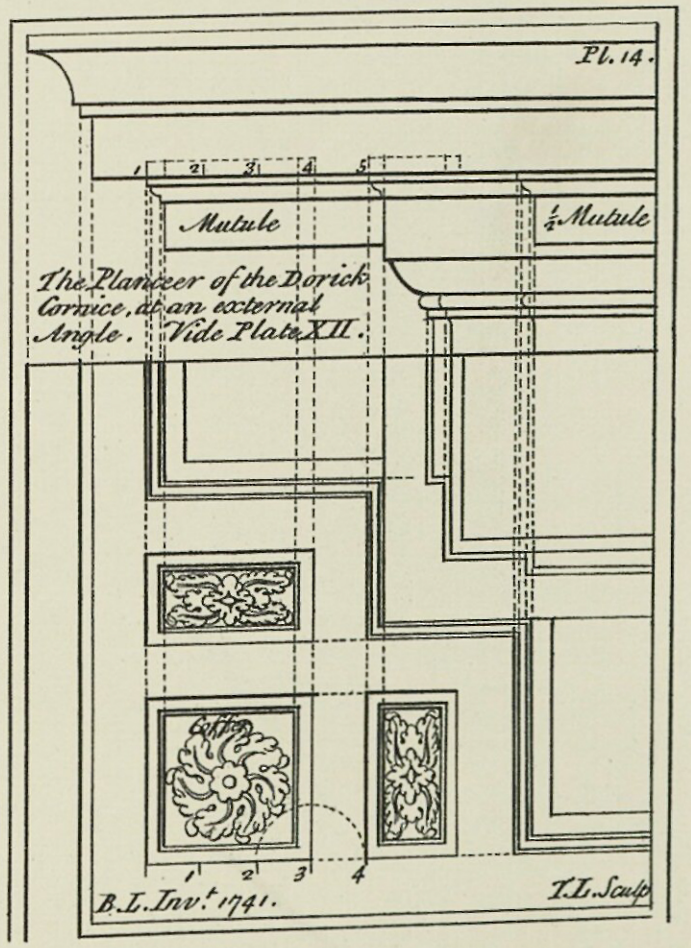
PLATES 5. 7. 8. 10.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.







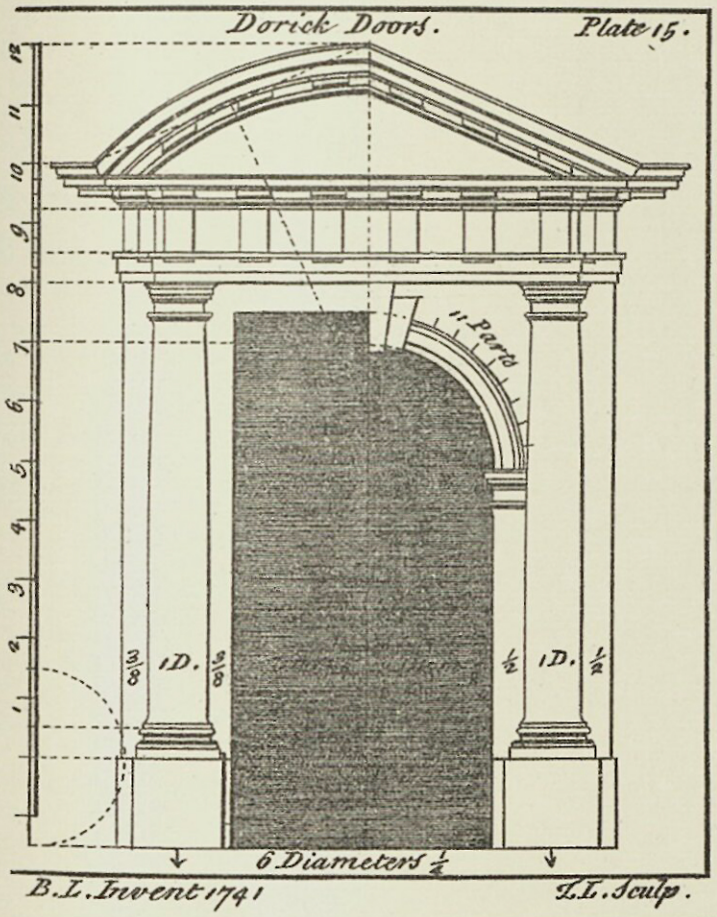


PLATES 11. 12. 13. 14.

FROM BATTY LANGLEY.

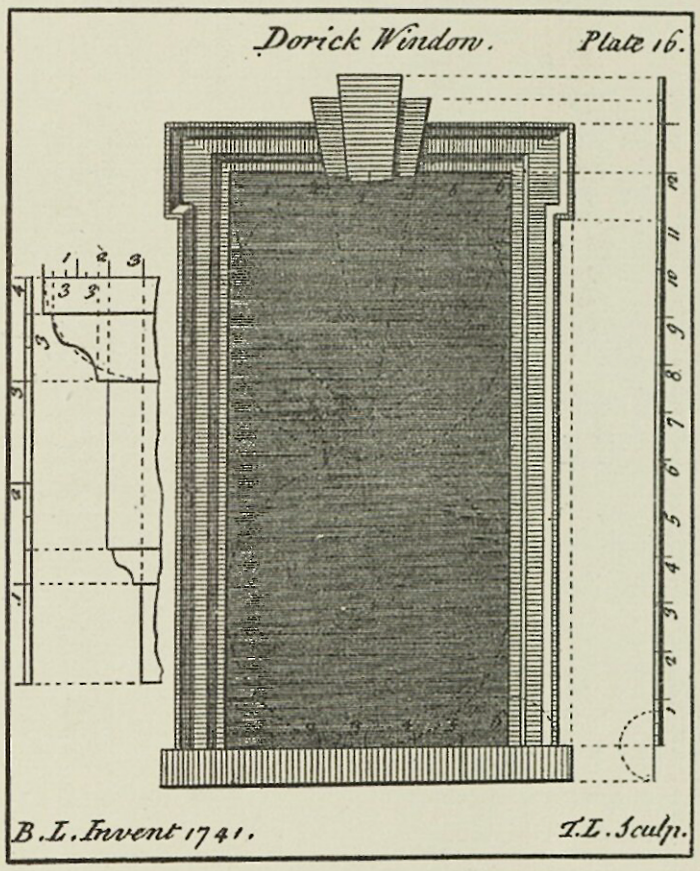
ANDREW H. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.

Dorick Doors. Plate 15.



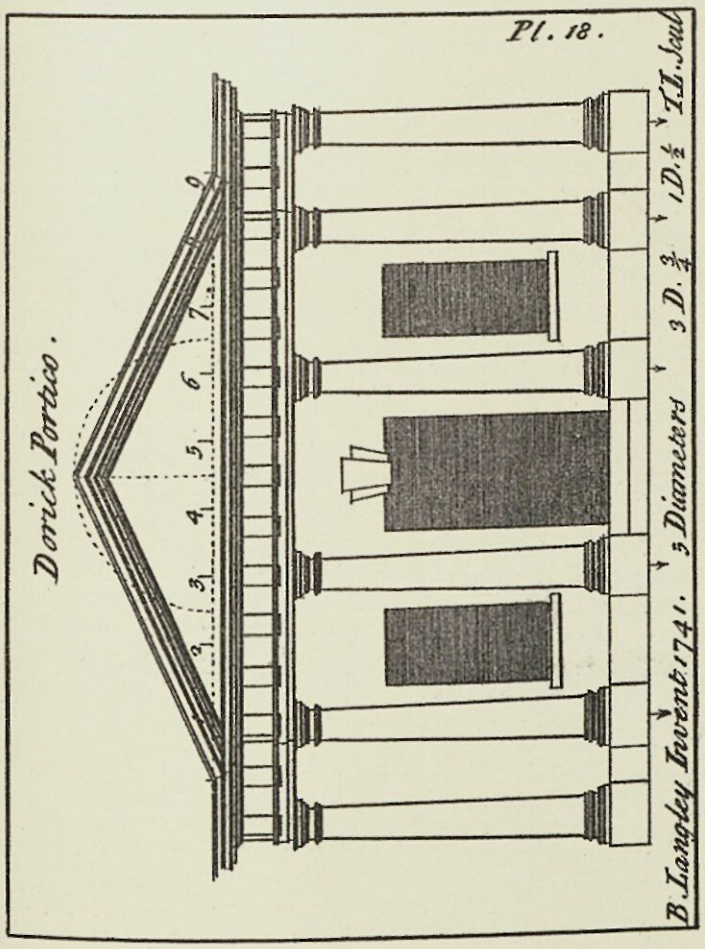
B. L. Invent 1741. T. L. Sculp.

Dorick Window. Plate 16.

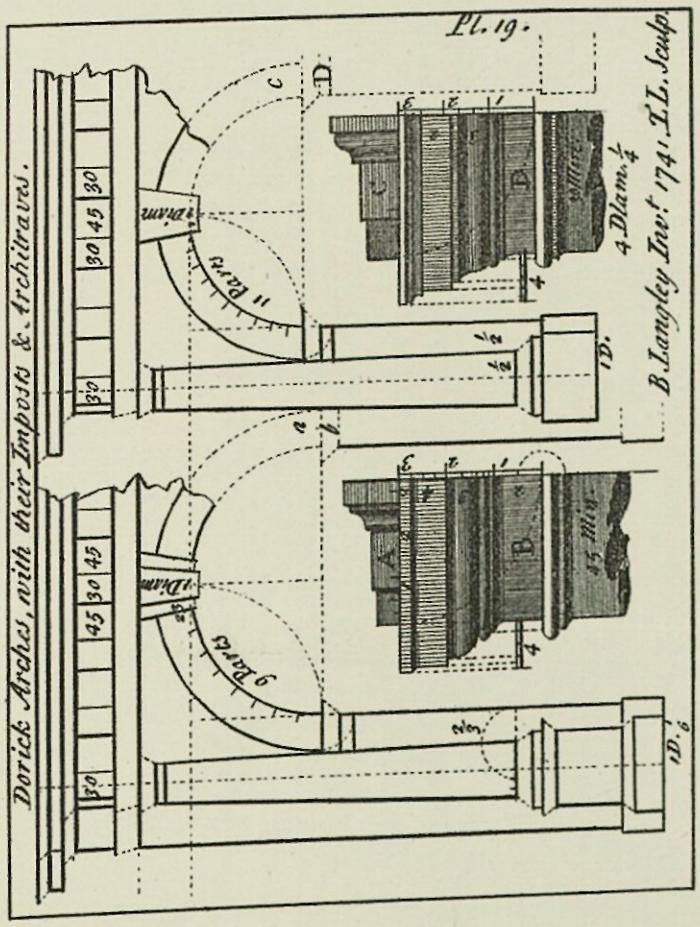


B. L. Invent 1741. T. L. Sculp.

Pl. 18.



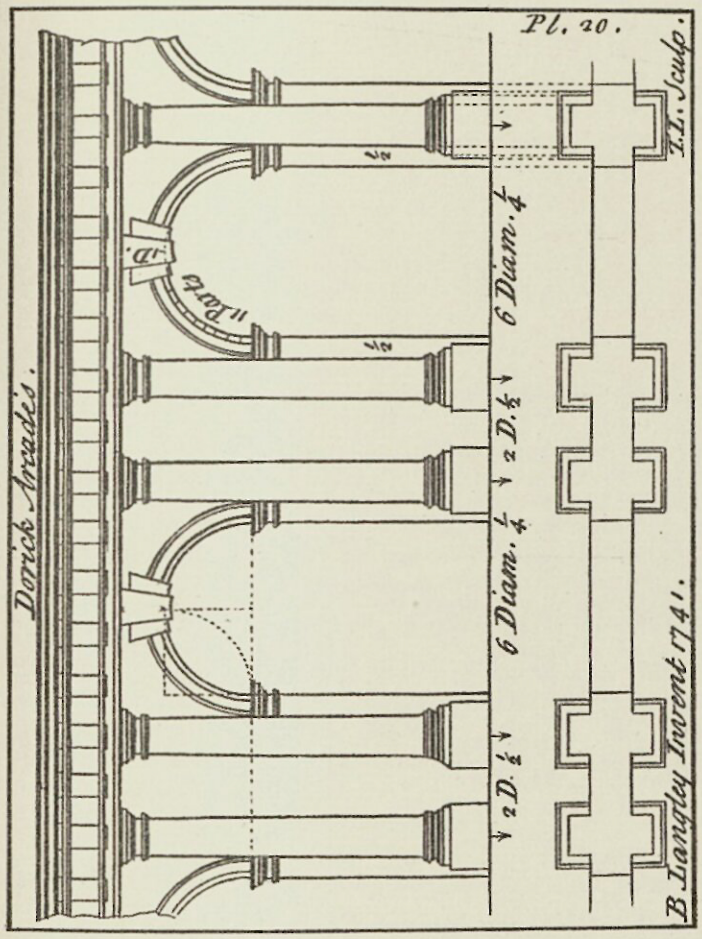
Pl. 19.

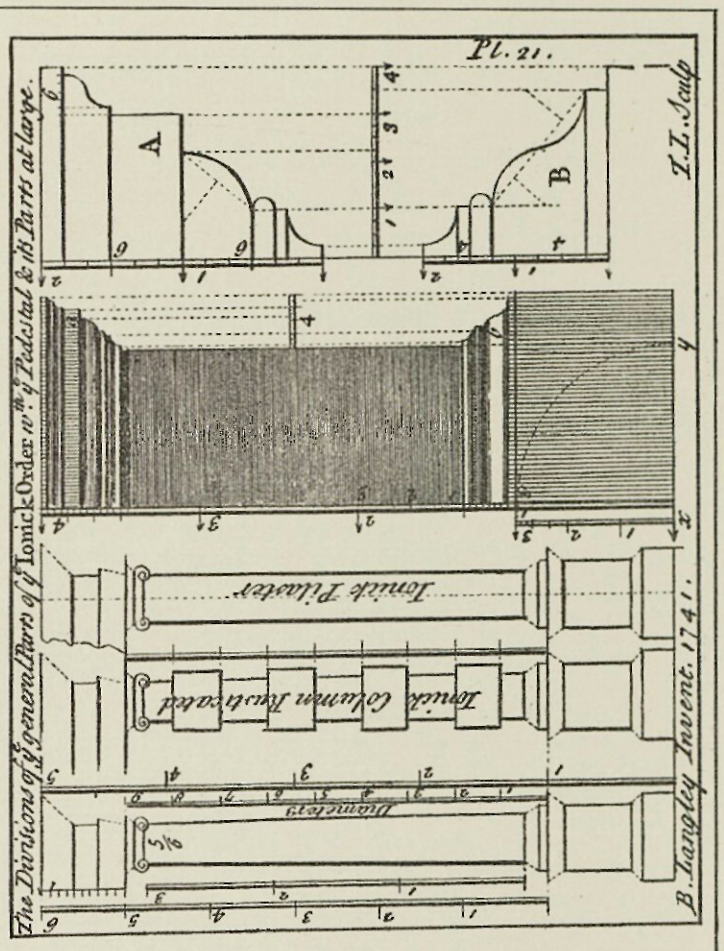


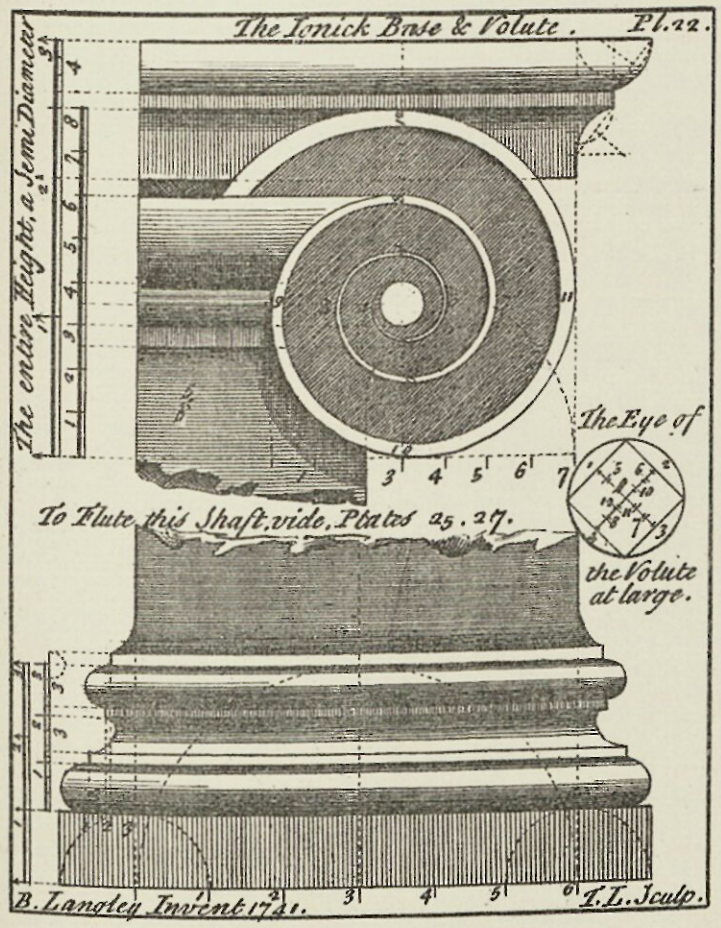
PLATES 15.16.18.19.

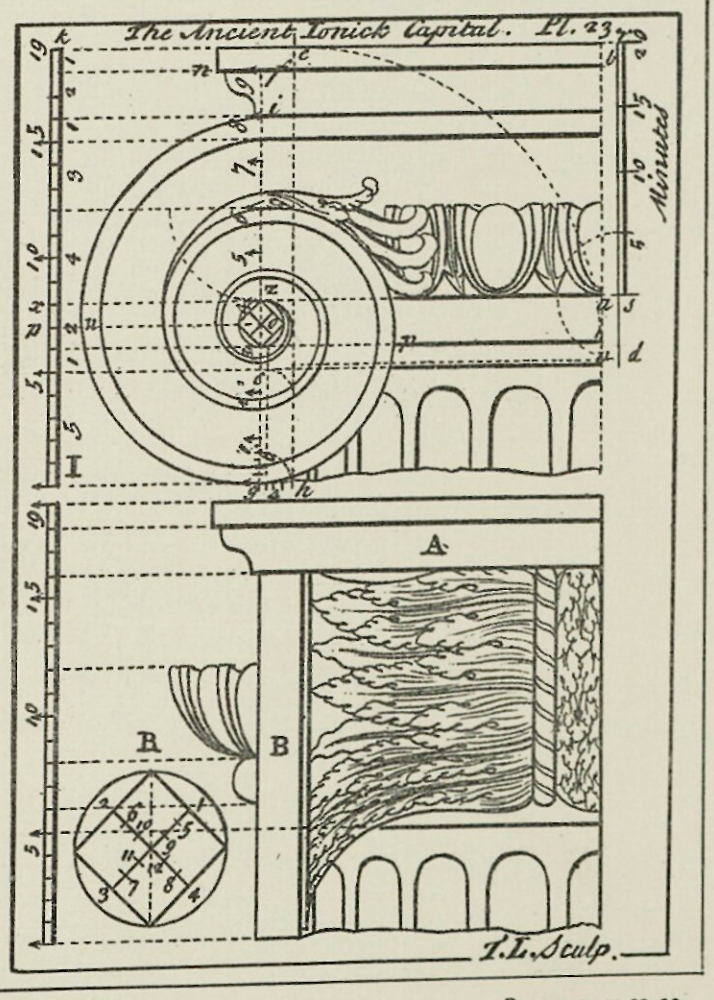
FROM BATTY LANGLEY.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D.C.







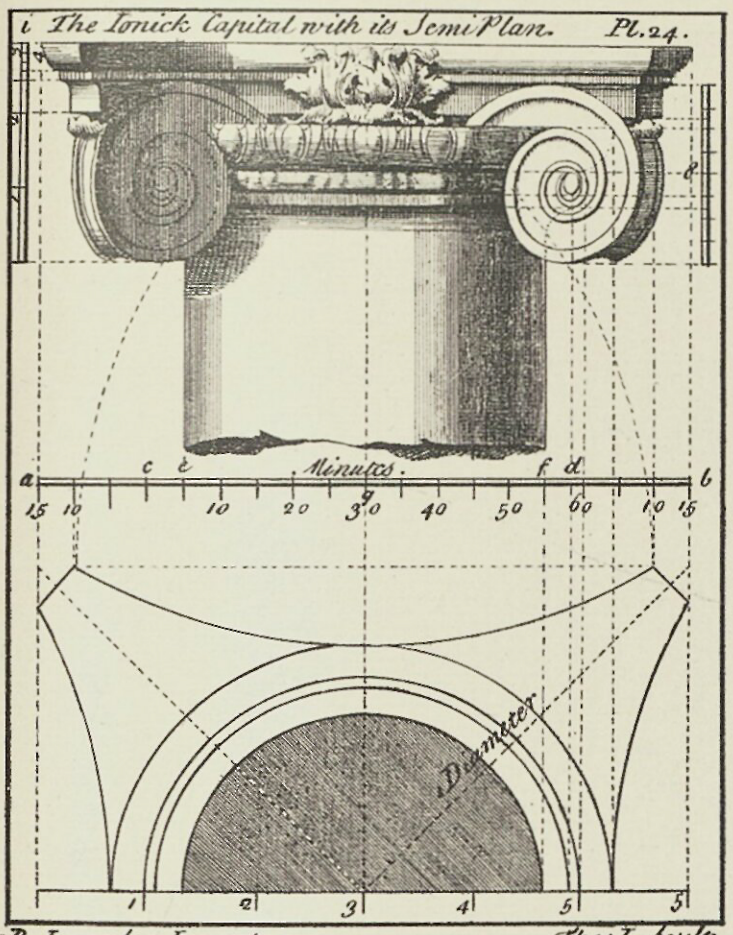


PLATES 20. 21. 22. 23.

FROM BATTY LANGLEY.

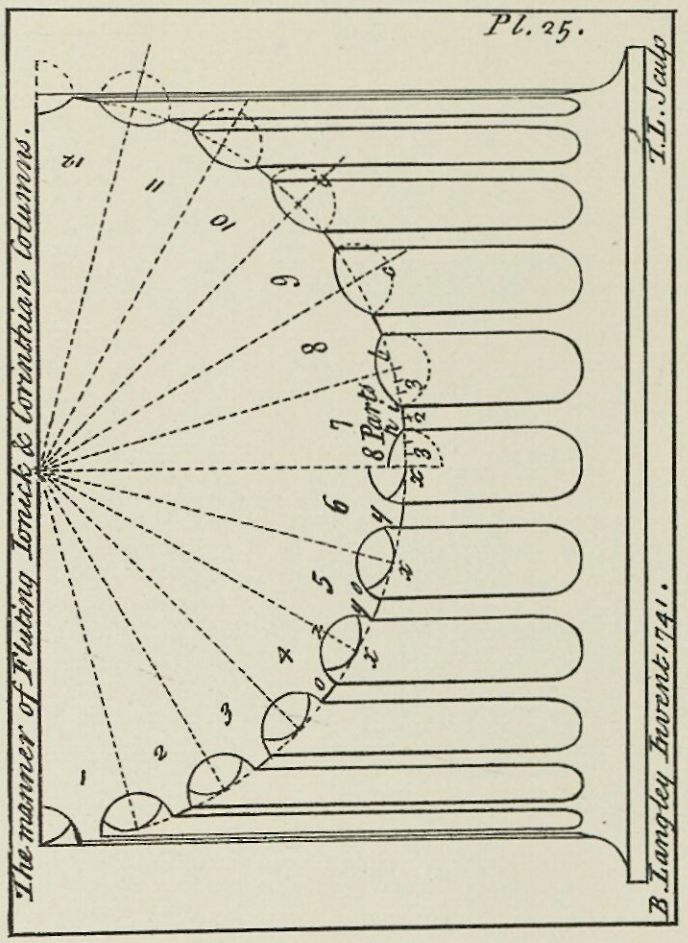
ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

i The Ionick Capital with its Semi Plan. Pl. 24.

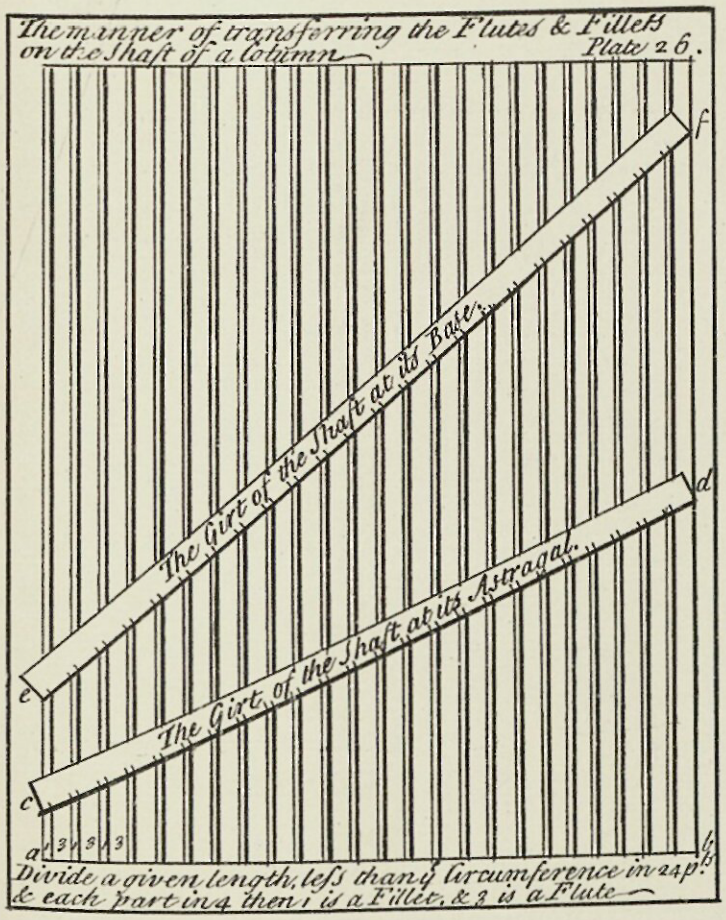


B. Langley Invent 1741. Tho: L. Sculp.

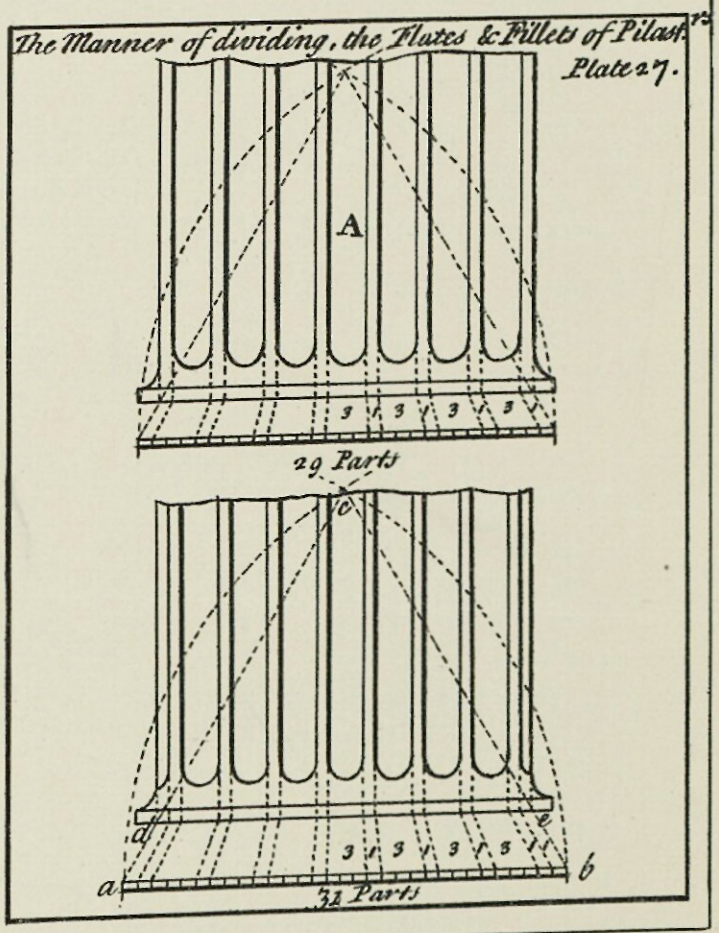
Pl. 25.



The manner of transferring the Flutes & Fillets on the Shaft of a Column. Plate 26.



The Manner of dividing the Flutes & Fillets of Pilast. Plate 27.

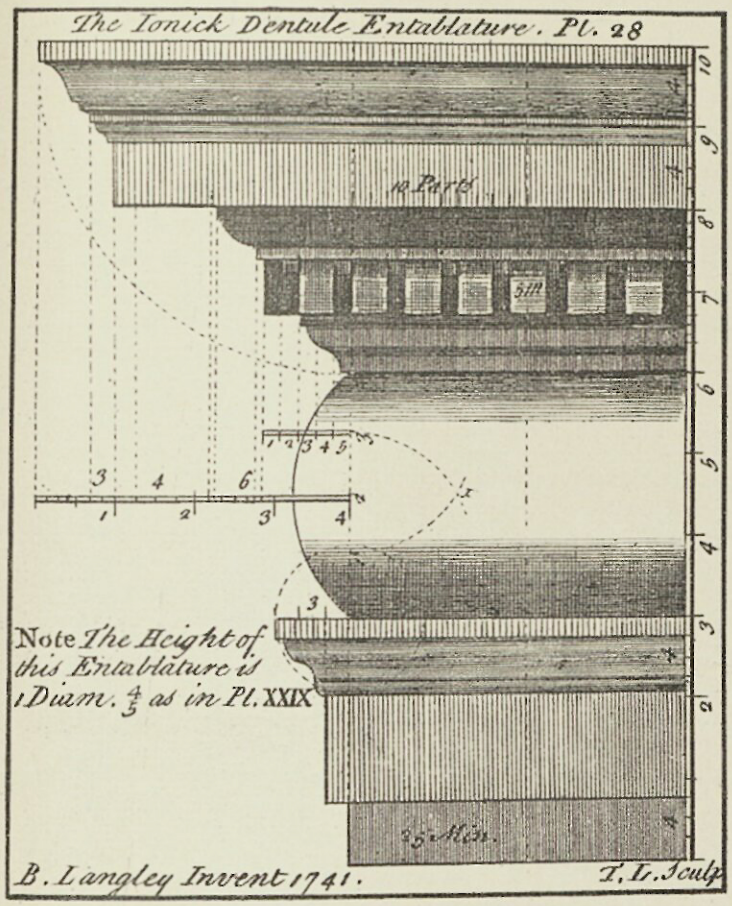


Plates 24.25.26.27.

From Batty Langley.

ANDREW B. GRAHAM CO. PHOTO-LITHOGRAPHERS. WASHINGTON, D. C.

The Ionick Dentule Entablature. Pl. 28



The Ionick Modilion Entablature Pl. 29.

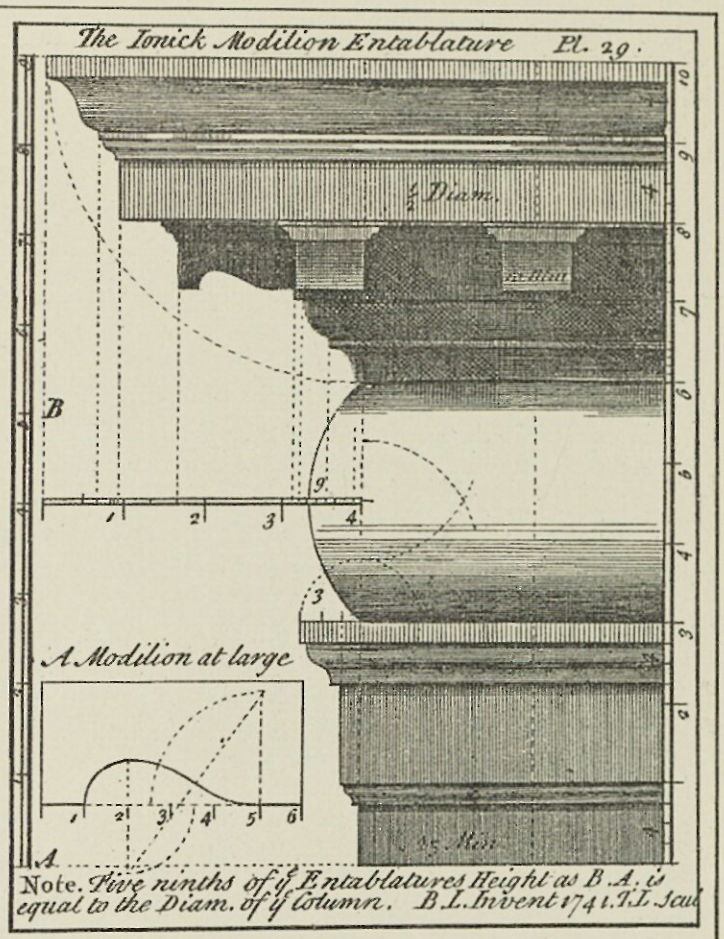


Plate 30

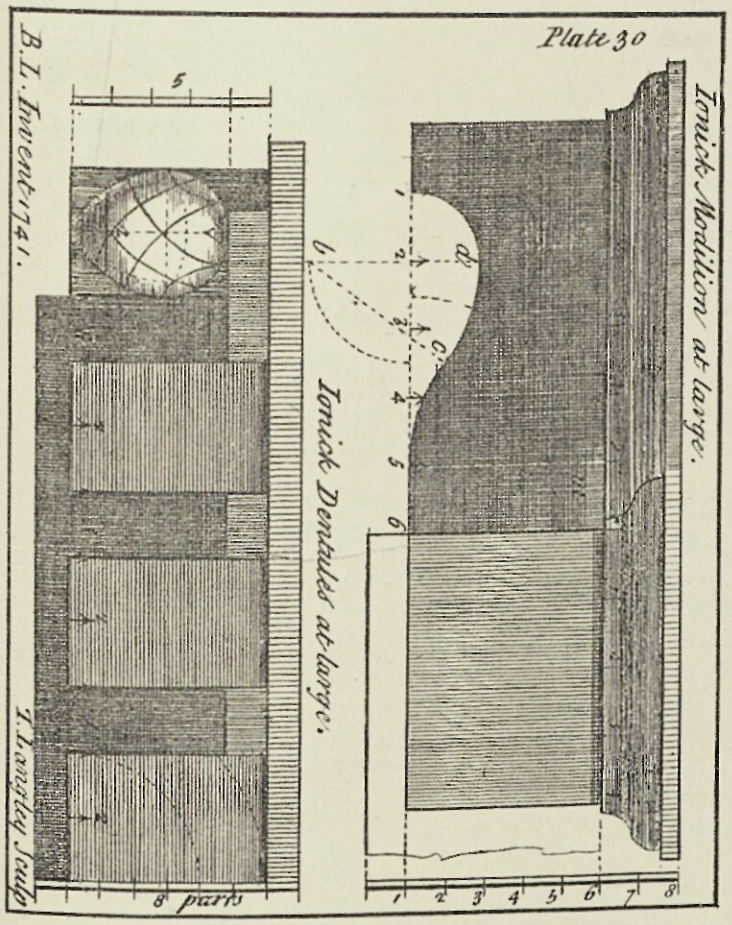
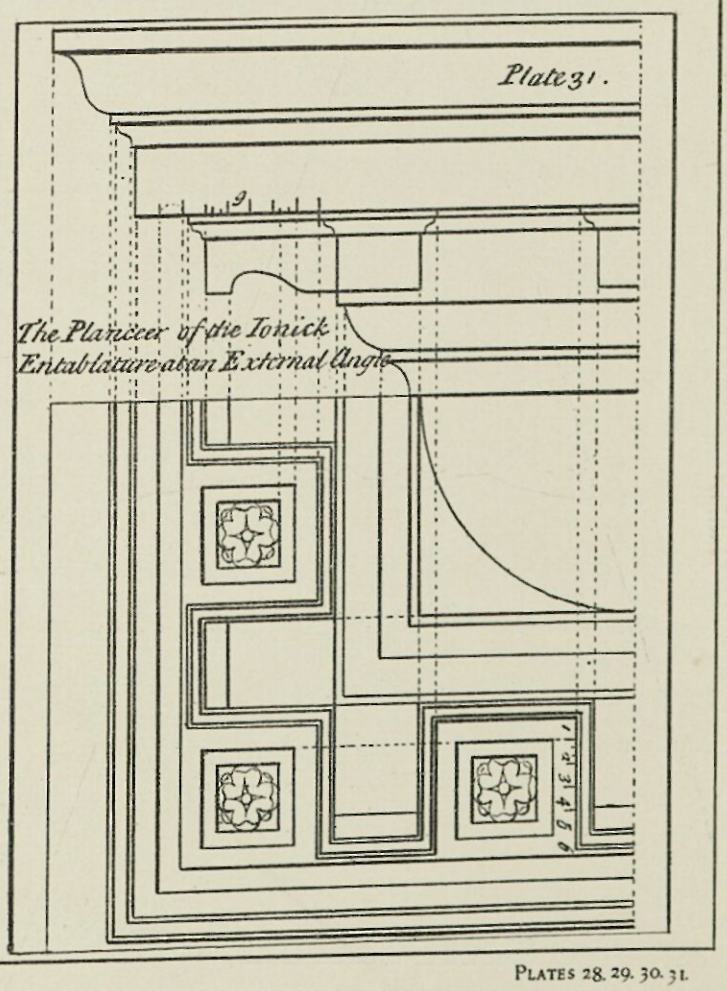


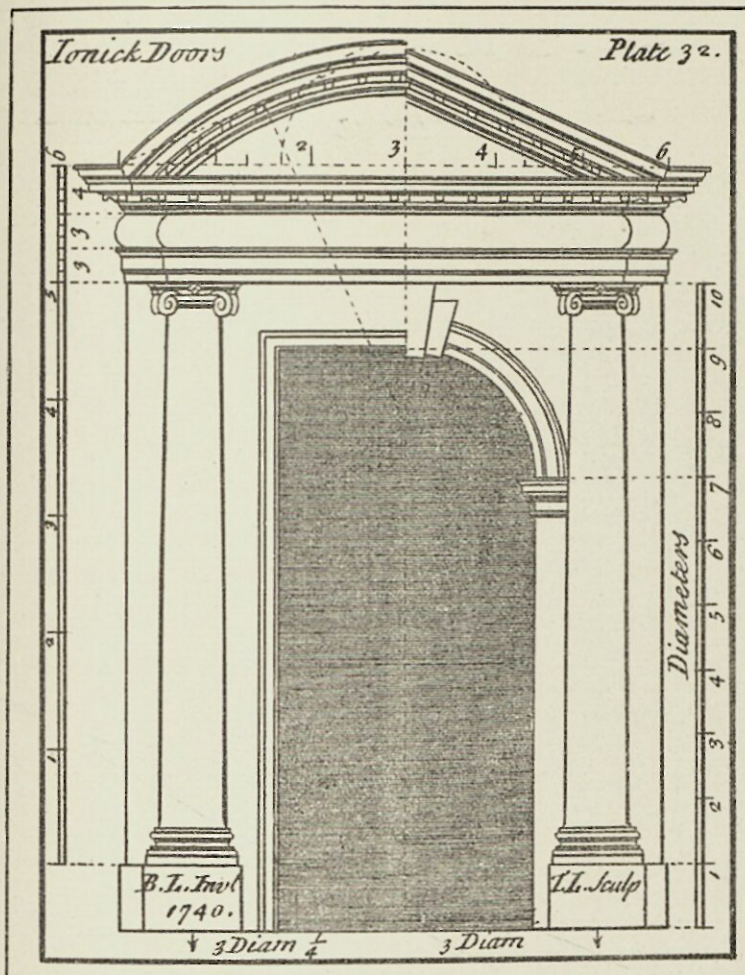
Plate 31.

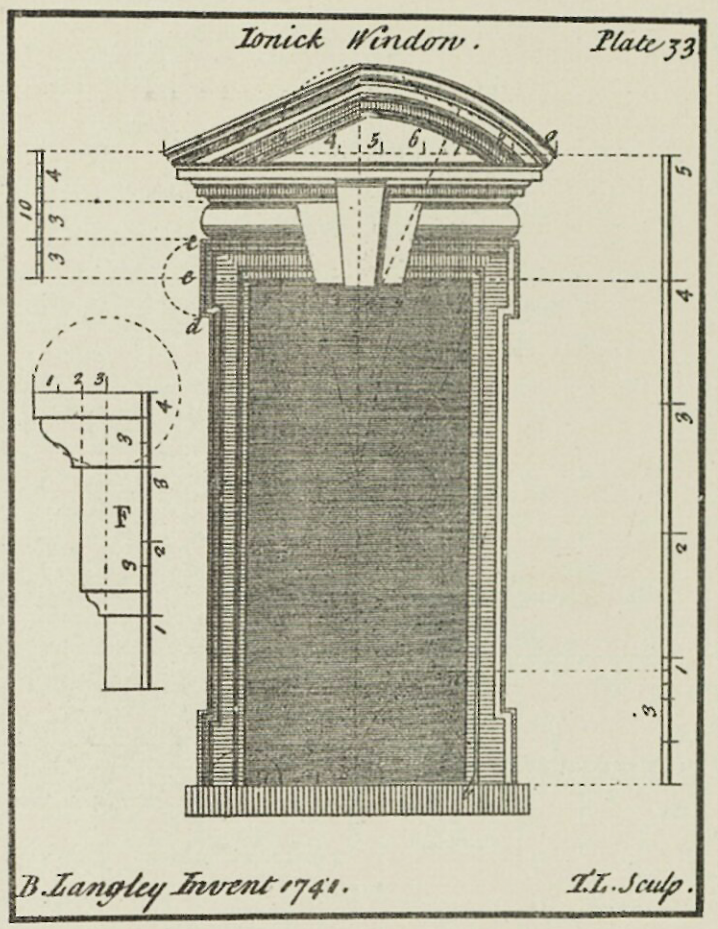


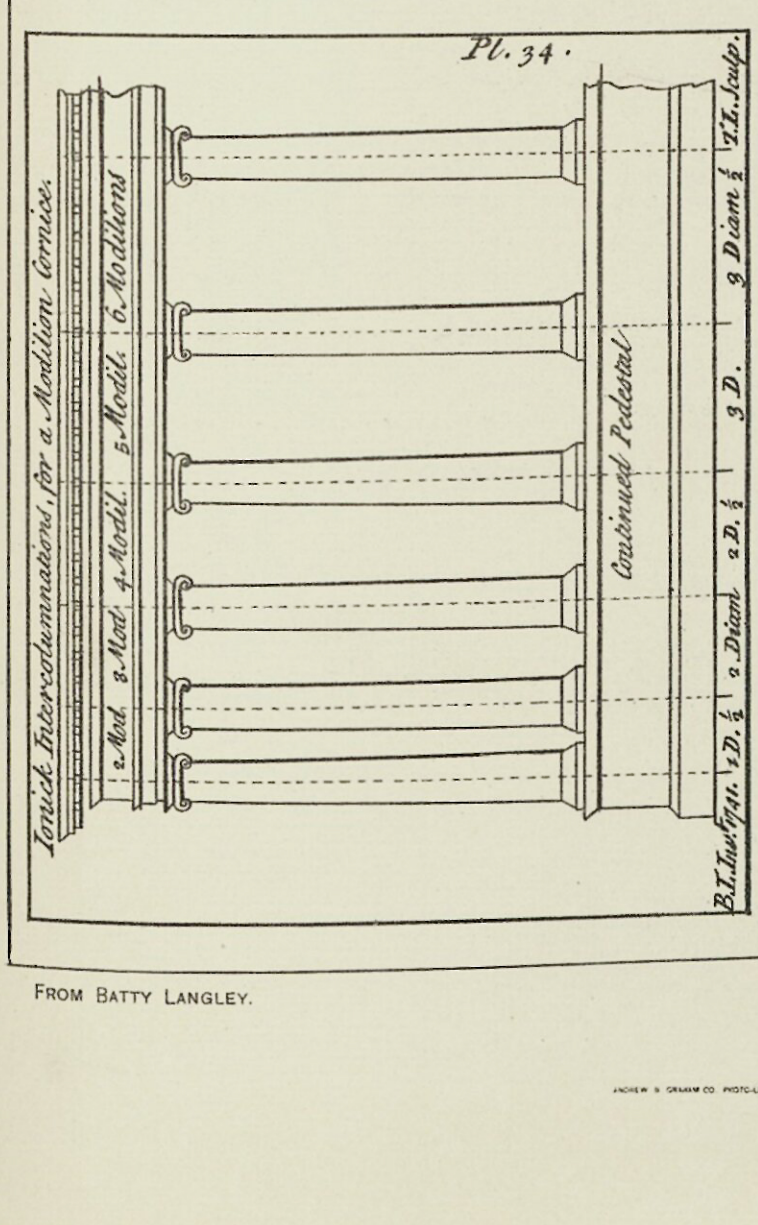
PLATES 28. 29. 30. 31.

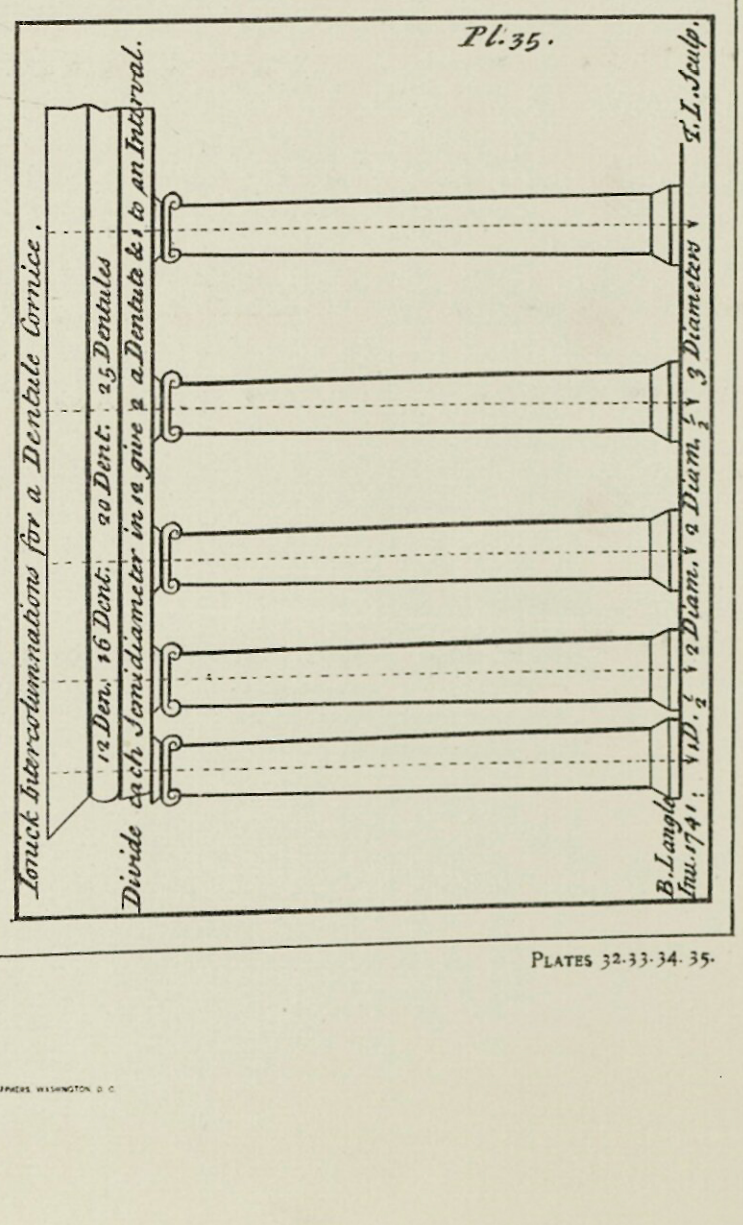
FROM BATTY LANGLEY.

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.





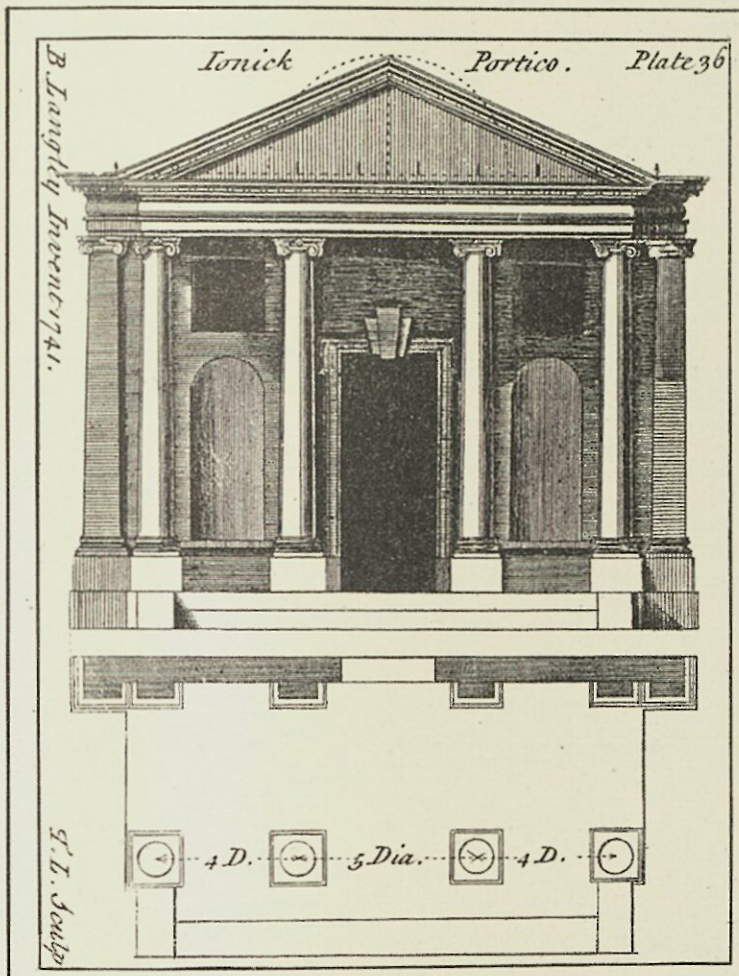


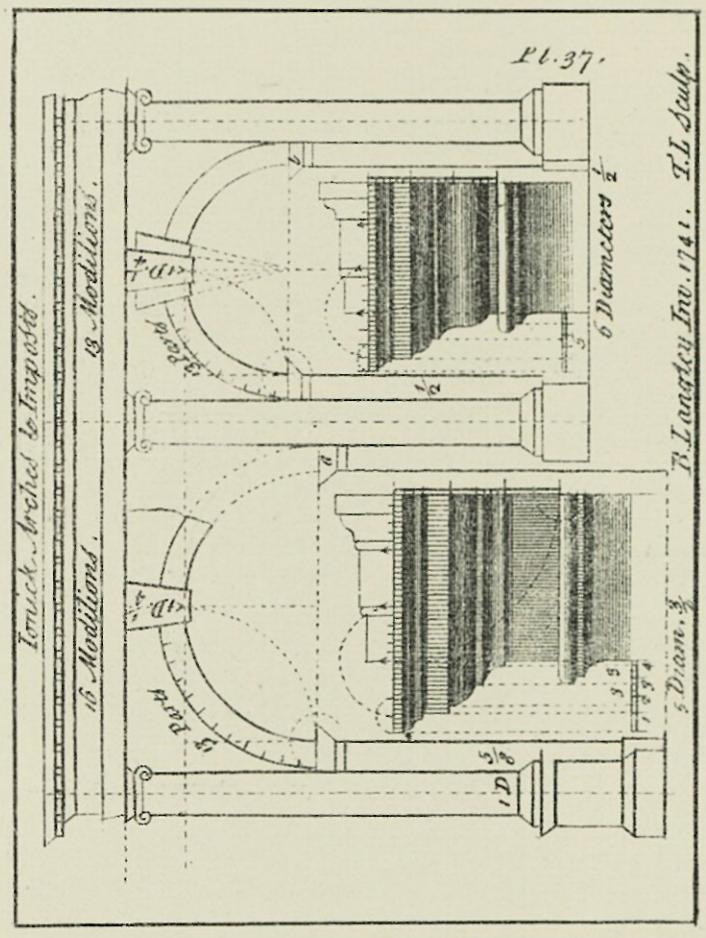


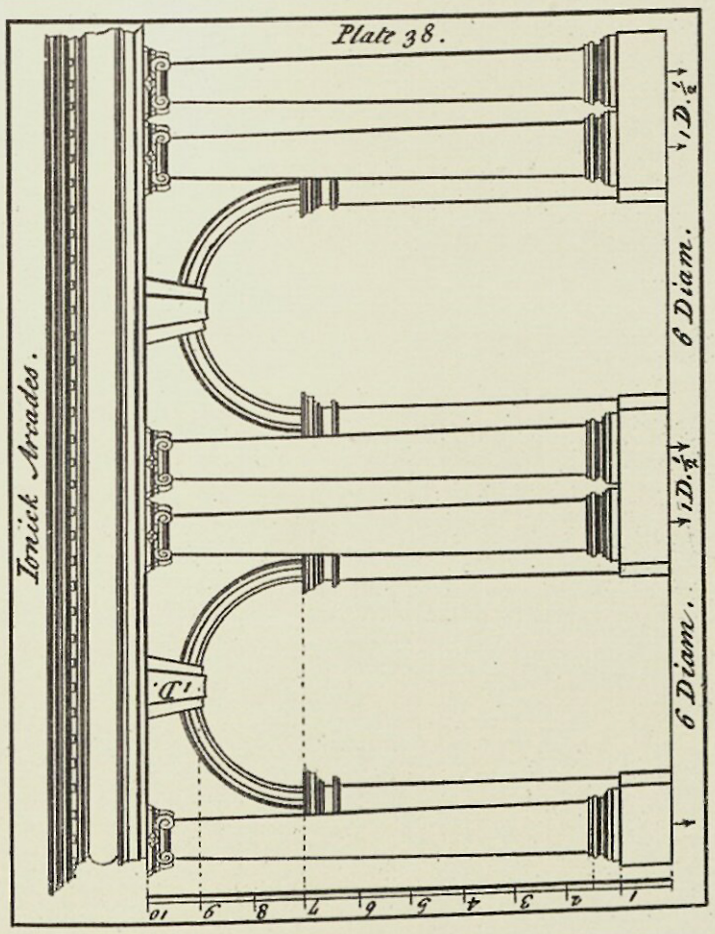
PLATES 32.33.34.35.

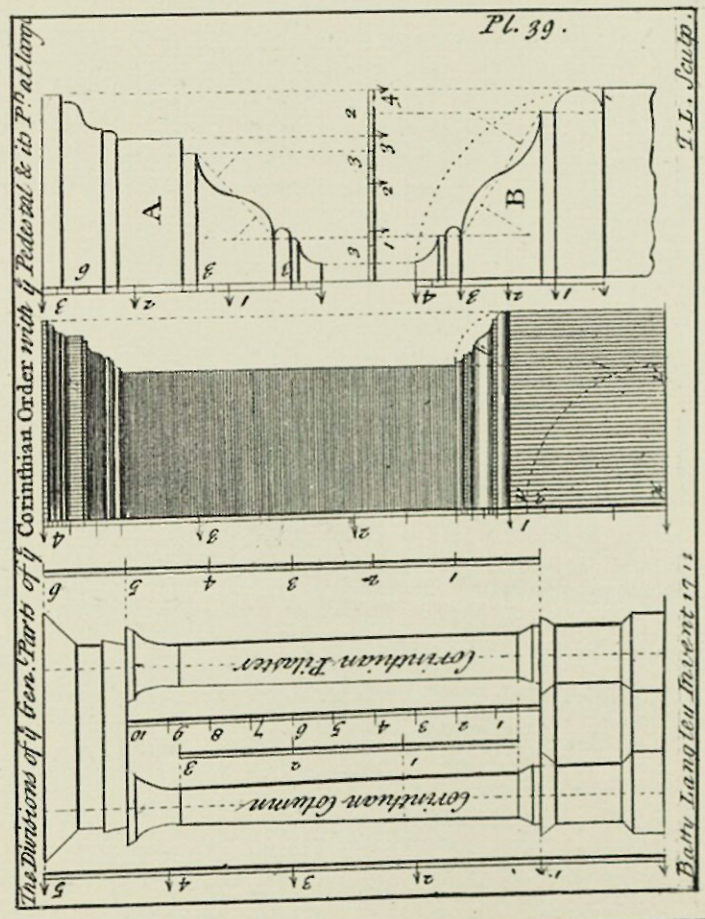
FROM BATTY LANGLEY.

ANDREW H. GRIMM CO. PHOTO-LITHOGRAPHERS. WASHINGTON, D. C.





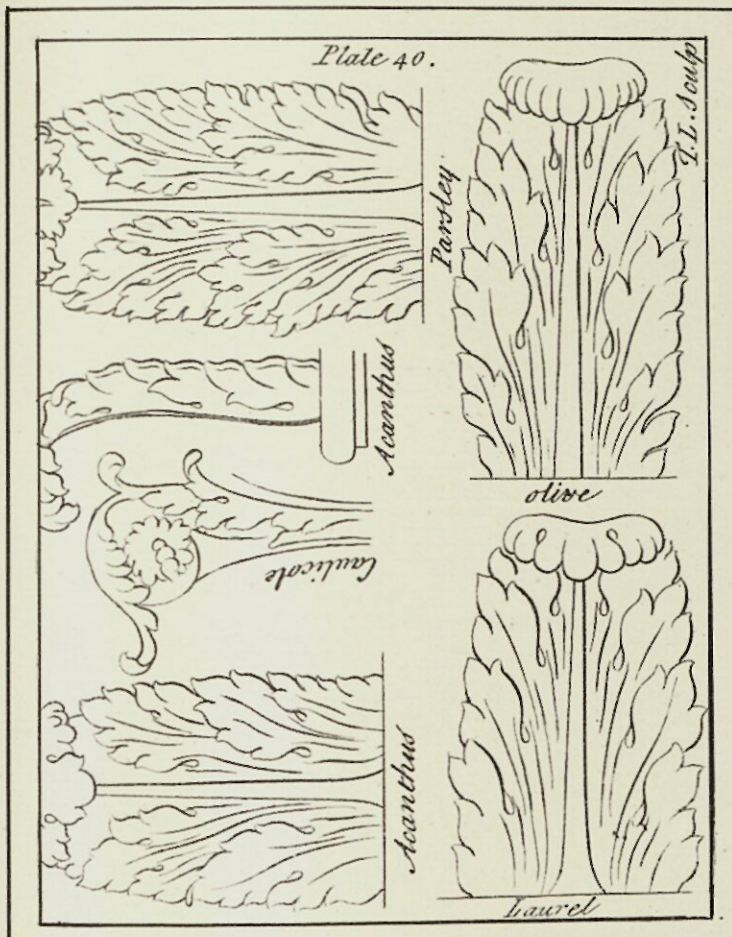


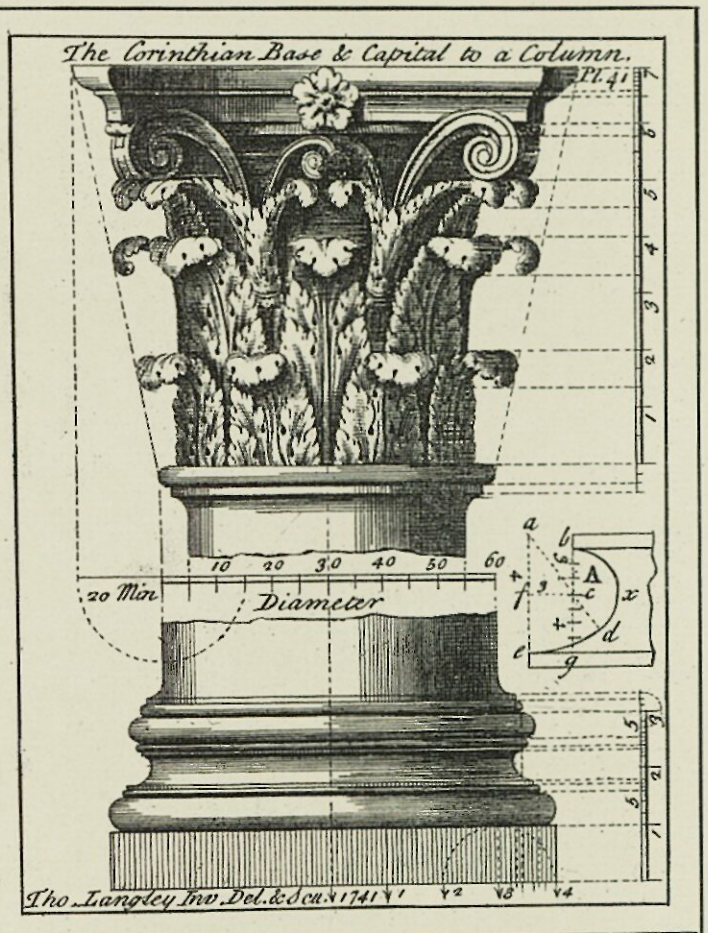


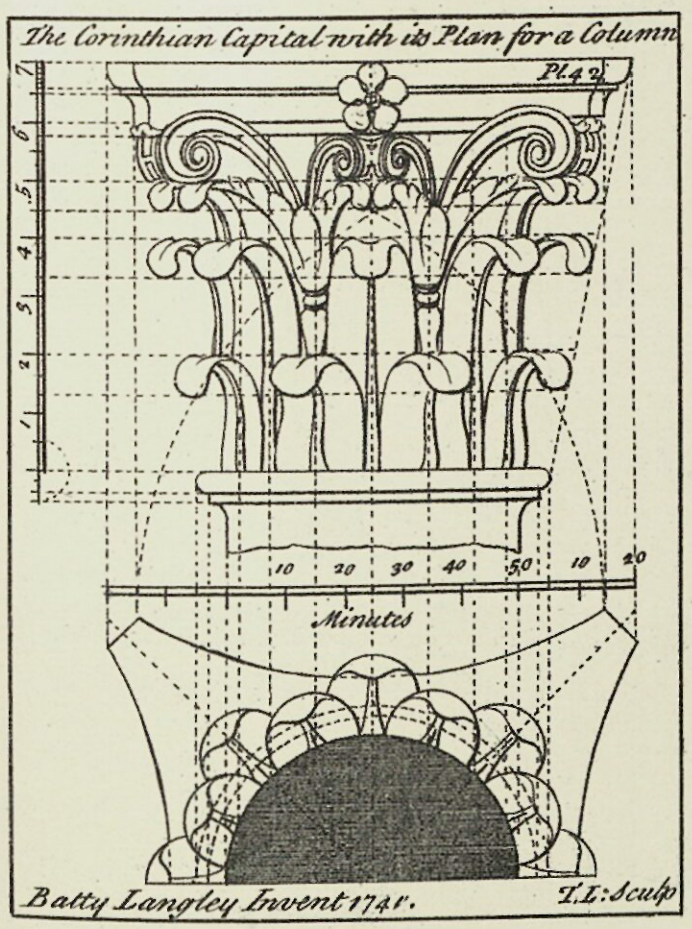
PLATES 36. 37. 38. and 39.

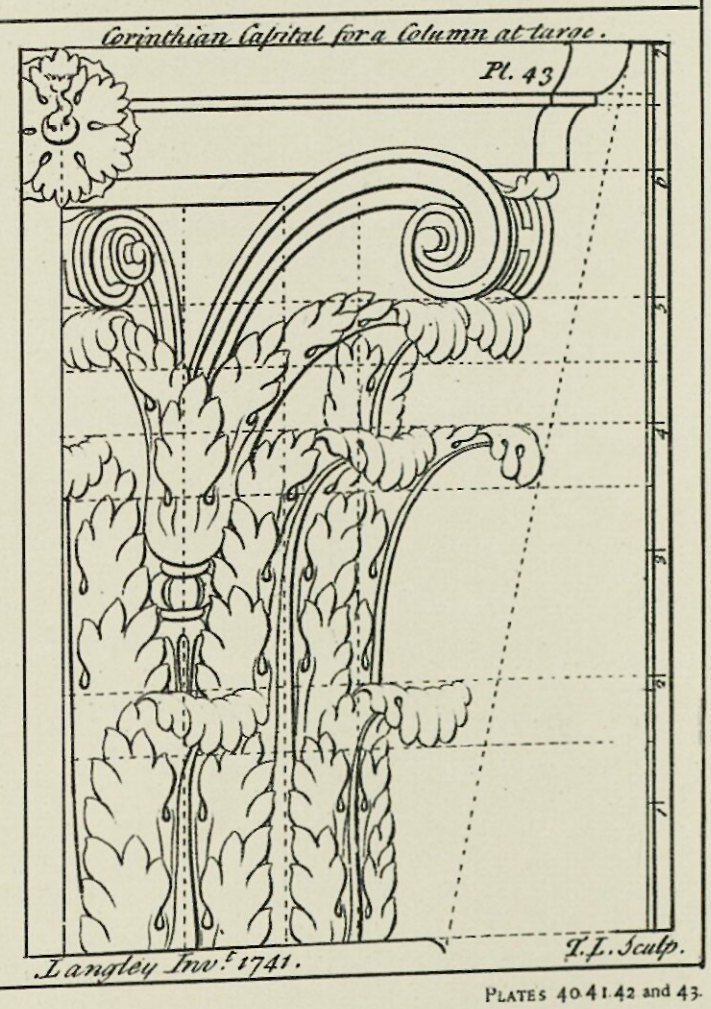
FROM BATTY LANGLEY.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.





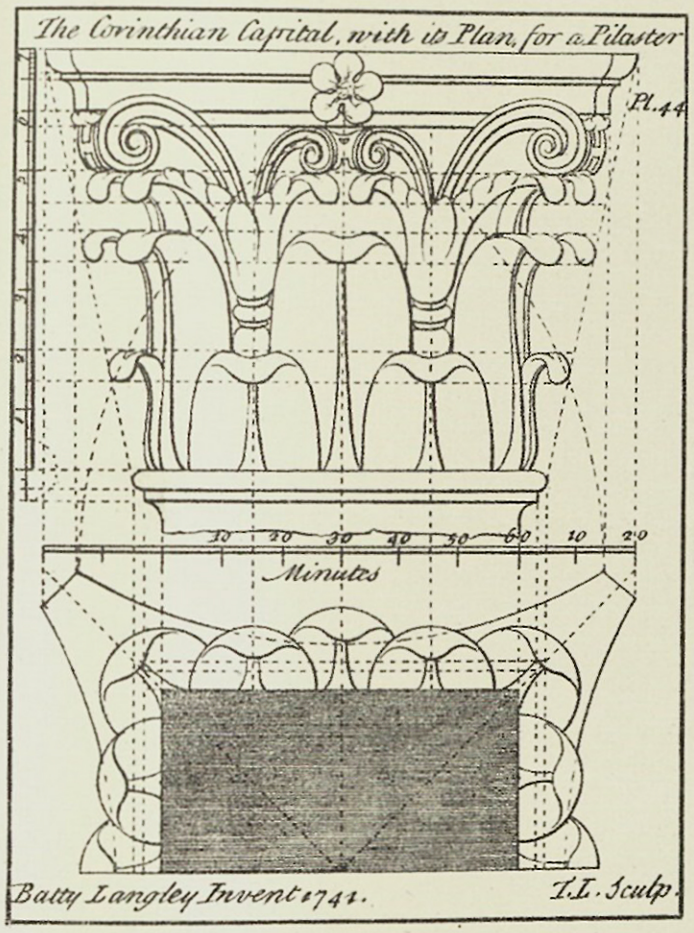


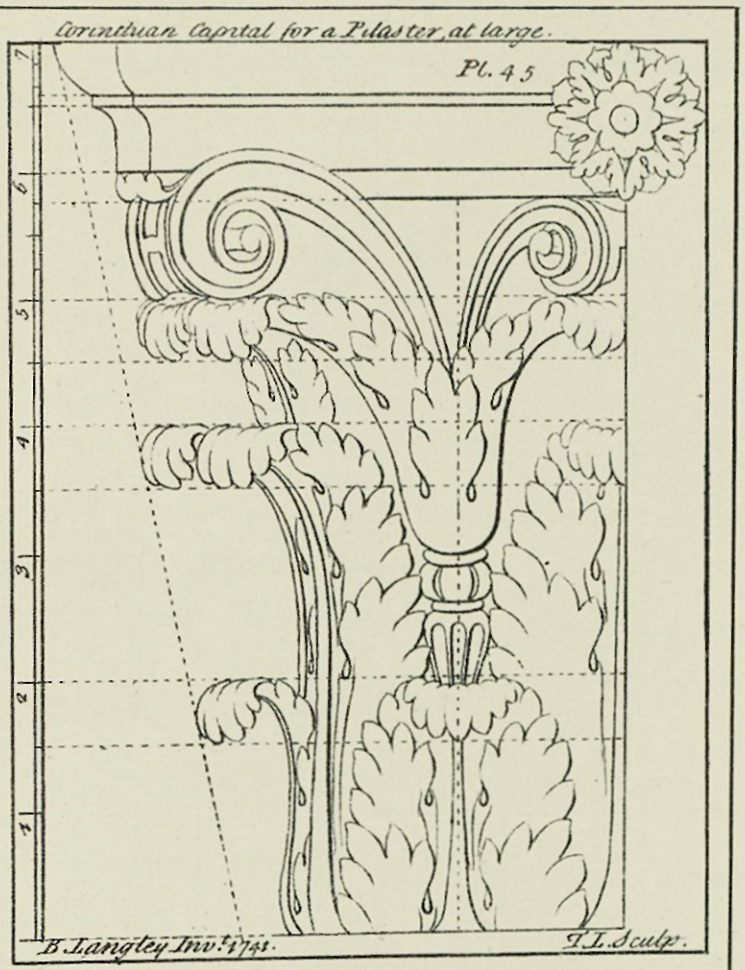


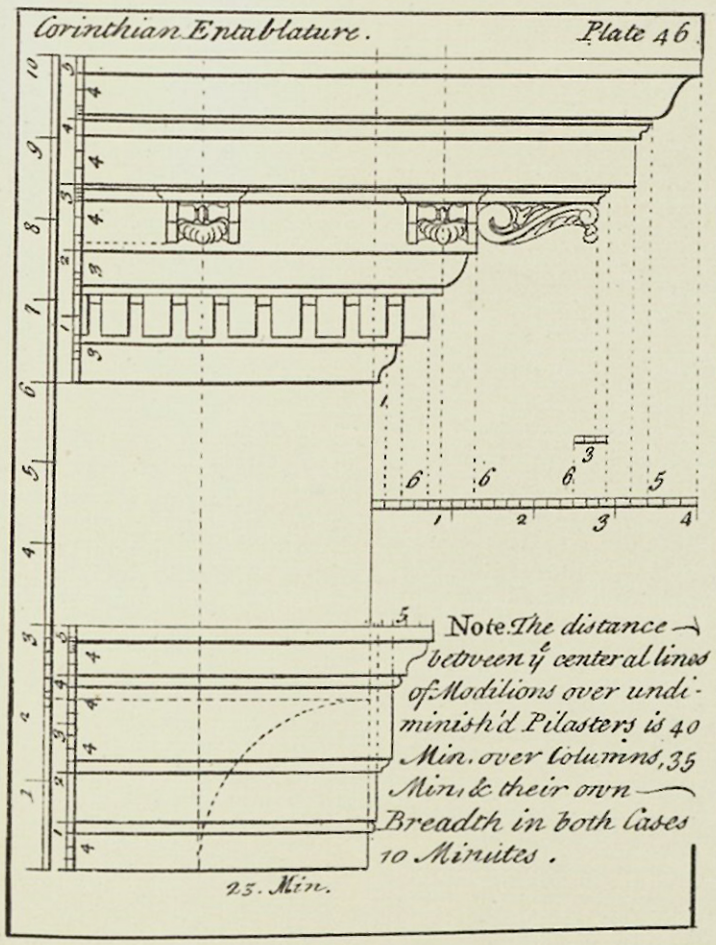
PLATES 40 41 42 and 43.

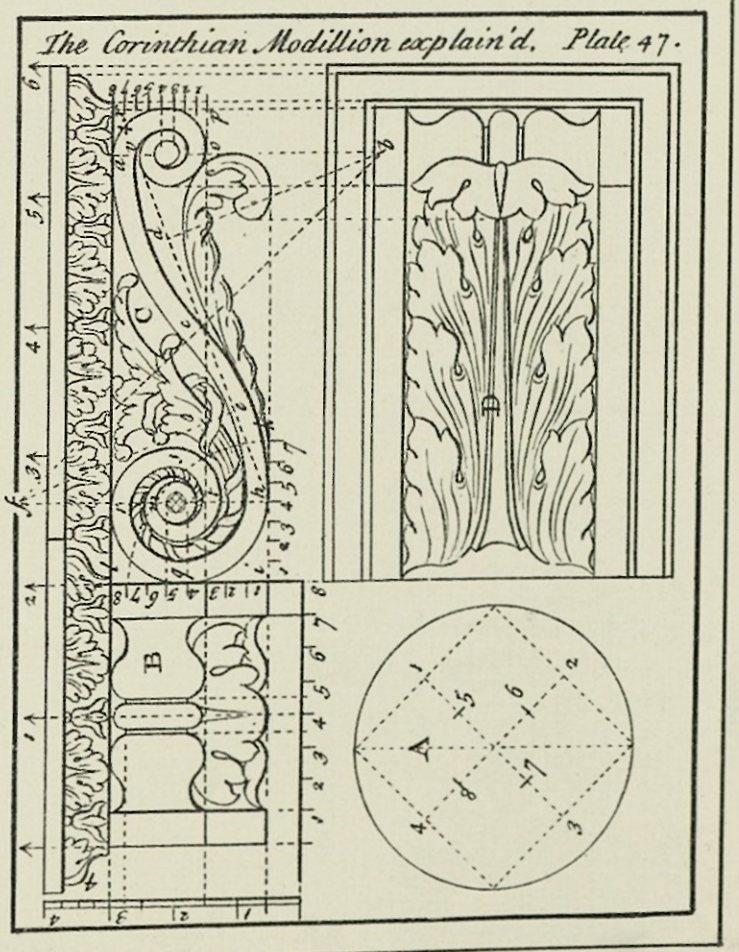
FROM BATTY LANGLEY.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.





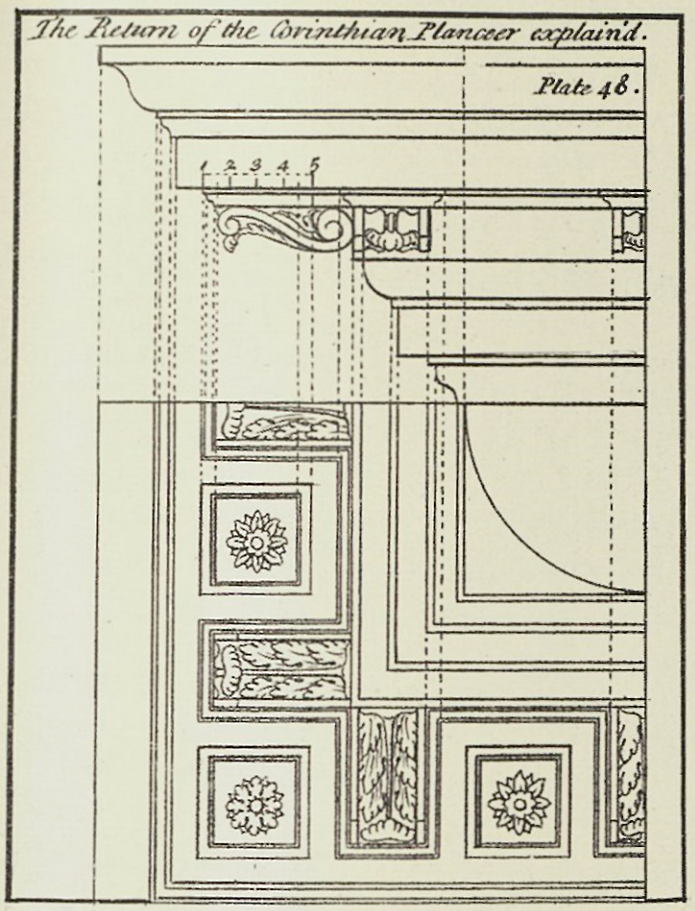


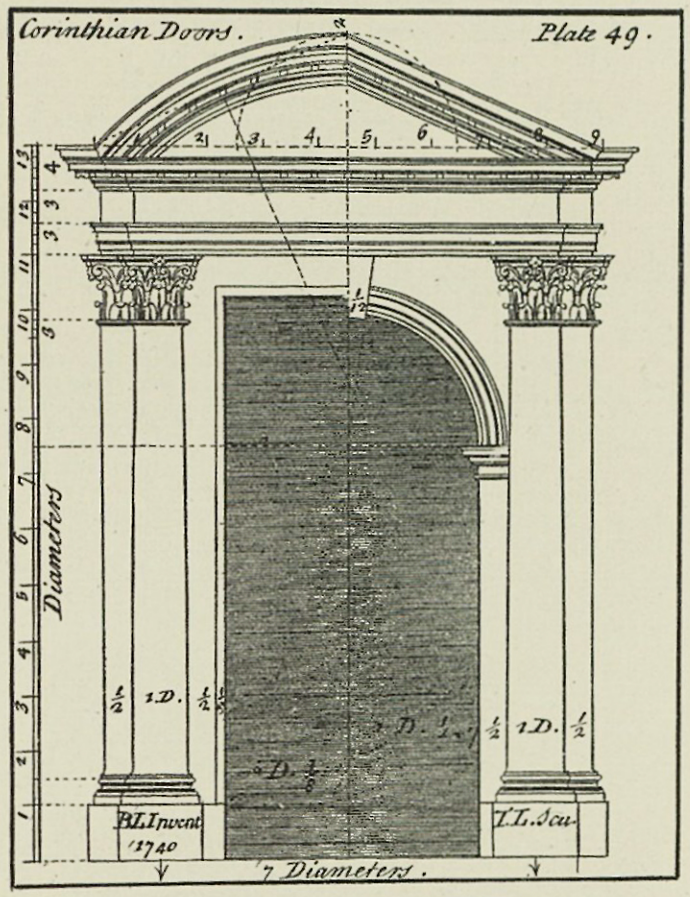


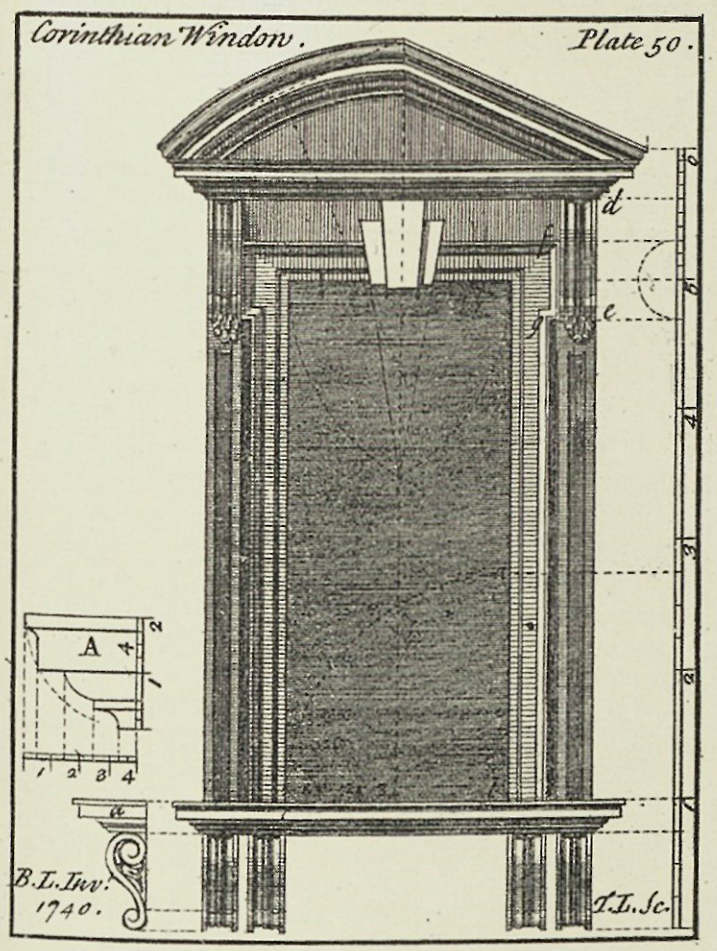
PLATES 44 45 46 and 47.

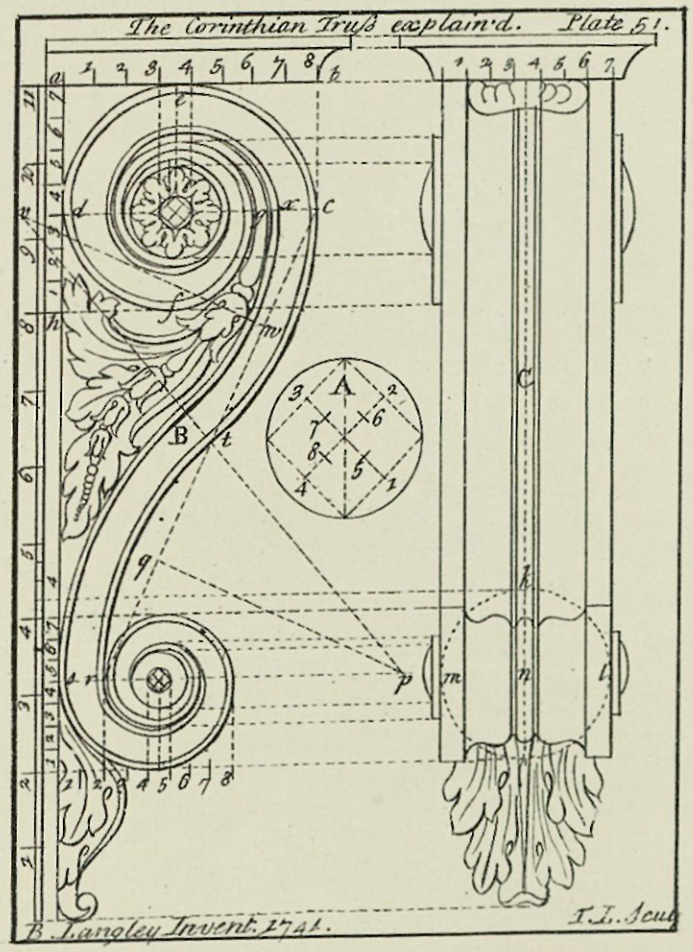
FROM BATTY LANGLEY.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.





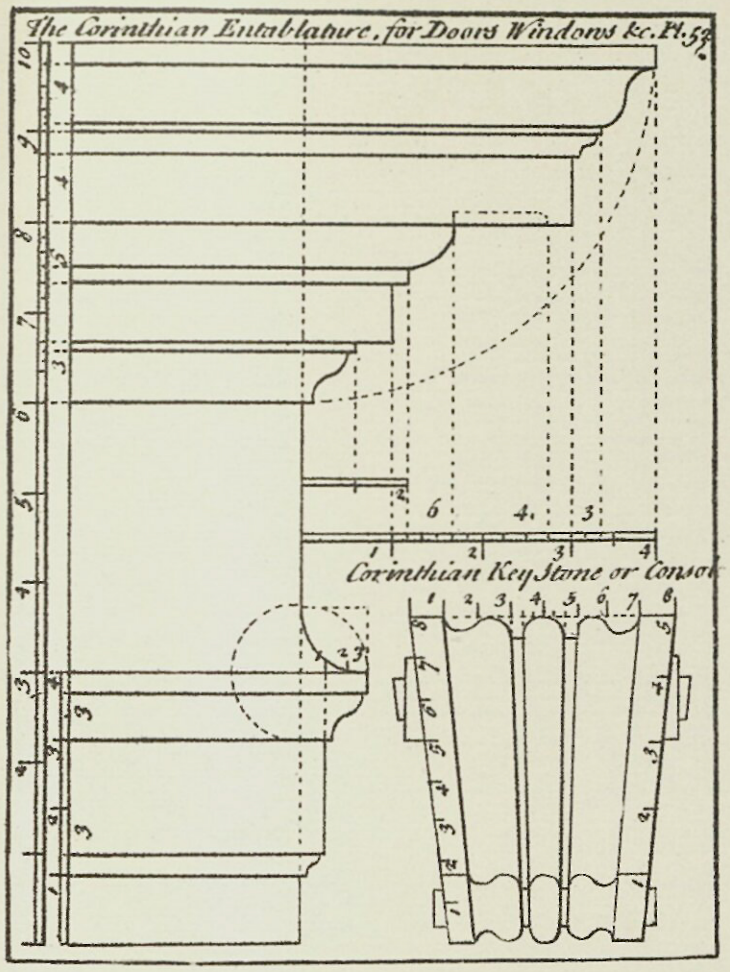




FROM BATTY LANGLEY.

PLATES 48 49 50 and 51.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.


The Corinthian Entablature, for Doors Windows &c. Pl. 53.
Corinthian Key Stone or Consol

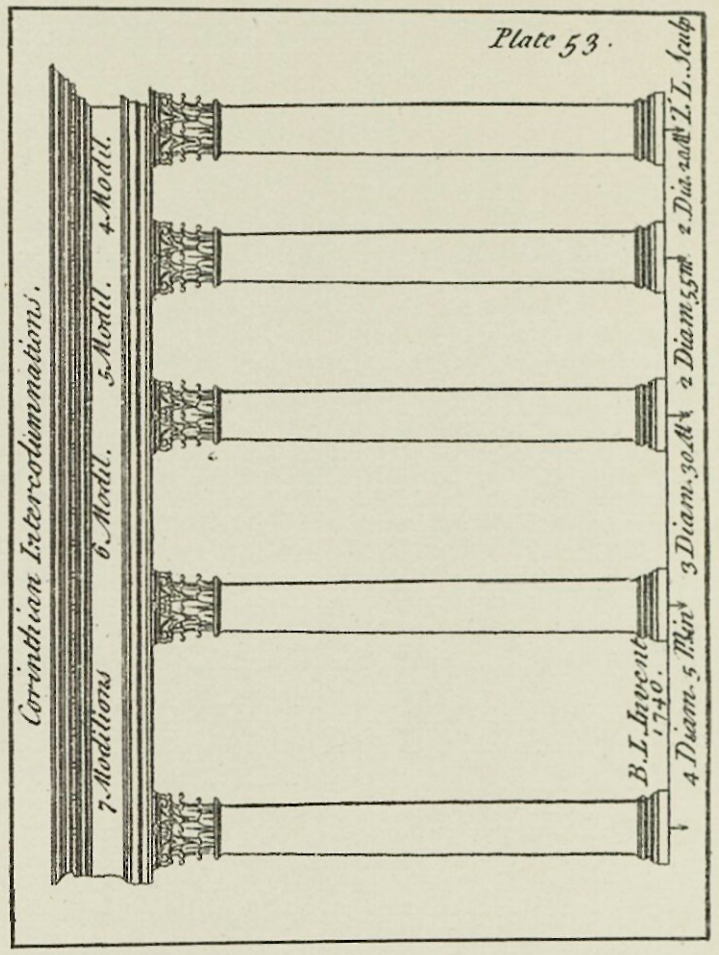
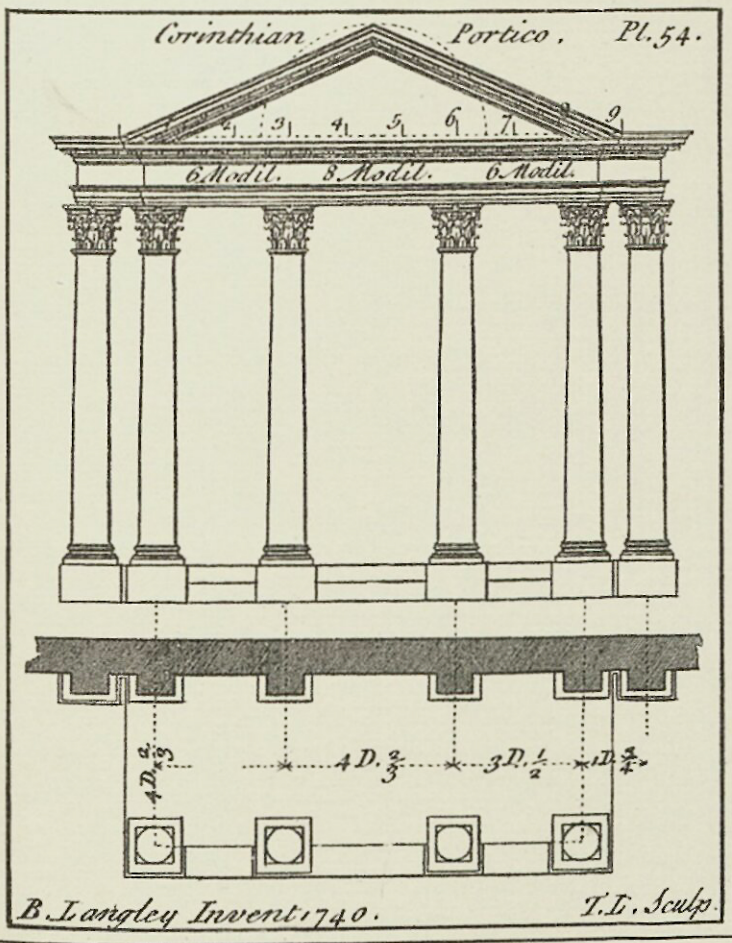


Plate 53.
Corinthian Intercolumniations.
7. Modilions
6. Modil.
5. Modil.
4. Modil.
4 Diam. 5 Plin.
3 Diam. 30 M.
2 Diam. 55 M.
2 Dia. 20 M.
B. L. Invent. 1740.
T. L. Sculp.


Corinthian Portico. Pl. 54.
6 Modil.
8 Modil.
6 Modil.
B. Langley Invent. 1740.
T. L. Sculp.

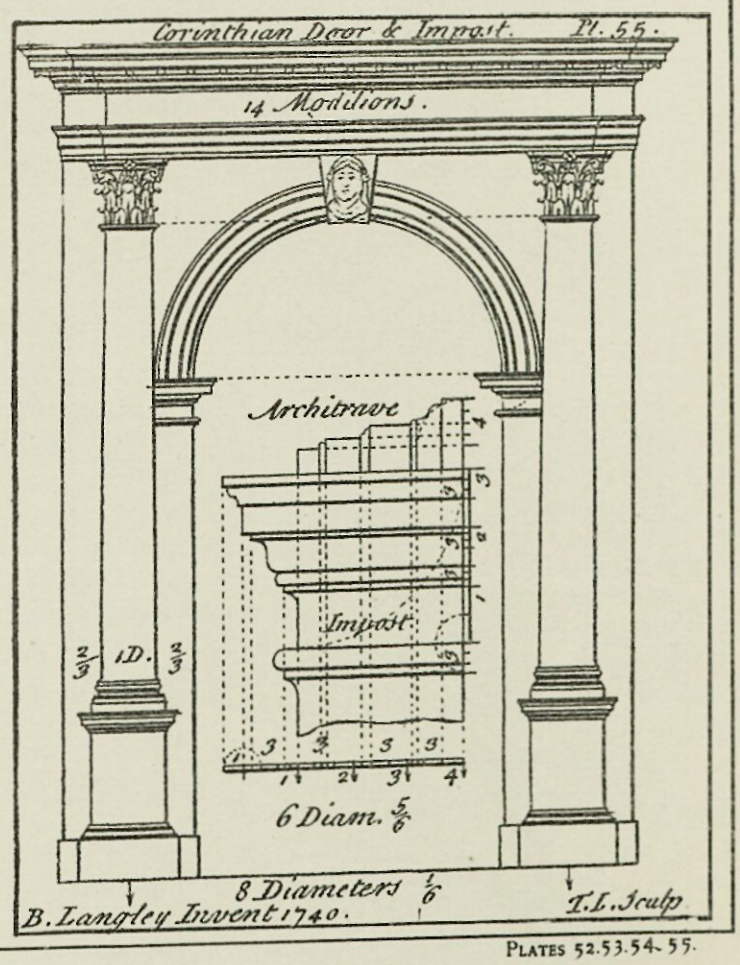

Corinthian Door & Impost. Pl. 55.
14 Modilions.
Architrave
Impost
6 Diam. 5/6
8 Diameters 1/6
B. Langley Invent. 1740.
T. L. Sculp.

Plate 56.

Corinthian Arcades.

3 Mod. 1 Modillions 3 Mod. 1 Modillions.

5 Diam. 2 5 M.

1 D. 1/2

1 D.

5 Diam. 25 M. 1/2

1/2

T. L. Sculp

B. L. Invent 1740.

1/2 D. 1/4 6 Diam. 2 5 Mod. 1 D. 1/4 6 Diam. 2 5 Mod. 1/2 D. 1/4

Pl. 57.

A

T L Sculp

The Division of the General Parts of the Composite order with the Pedestal at Large.

B. Longley Invent 1740.

The Composite Base & Capital to a Column Pl. 58.

Minutes

10 20 30 40 50 60

B. Langley Invent 1740

T. L. Sculp

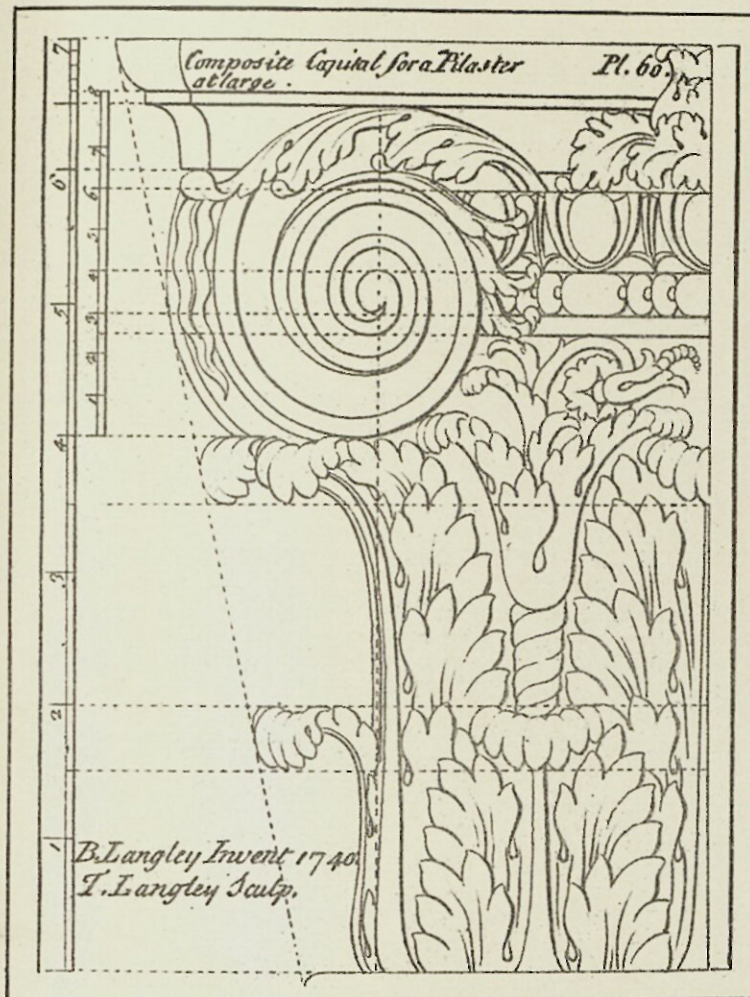
Composite Capital for a Column at large Pl. 59.

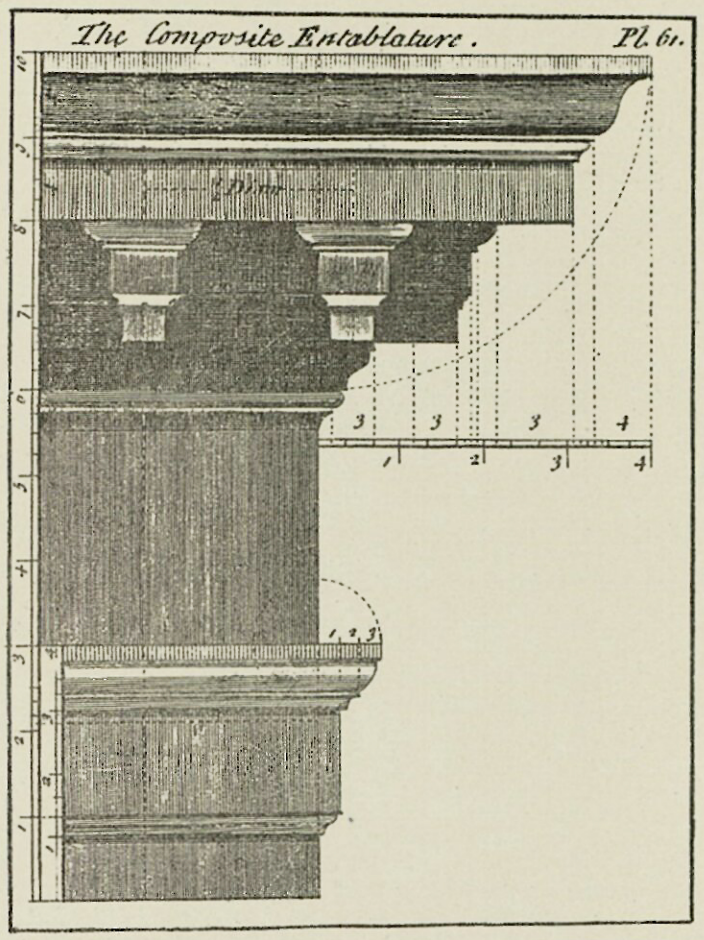
B. Langley Invent 1740
T. L. Sculp

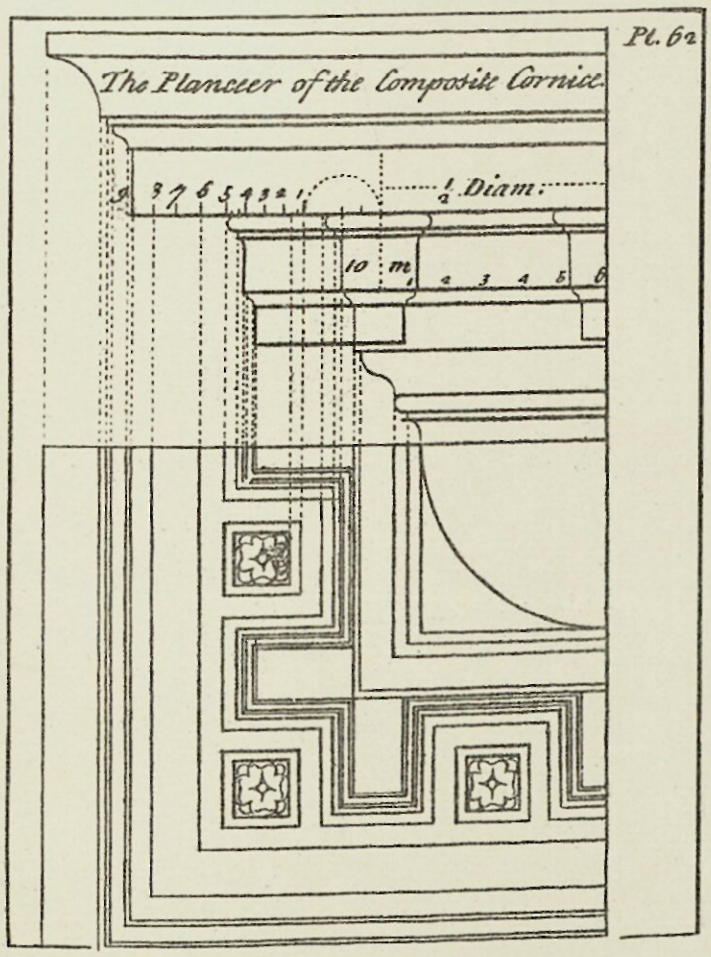
FROM BATTY LANGLEY.

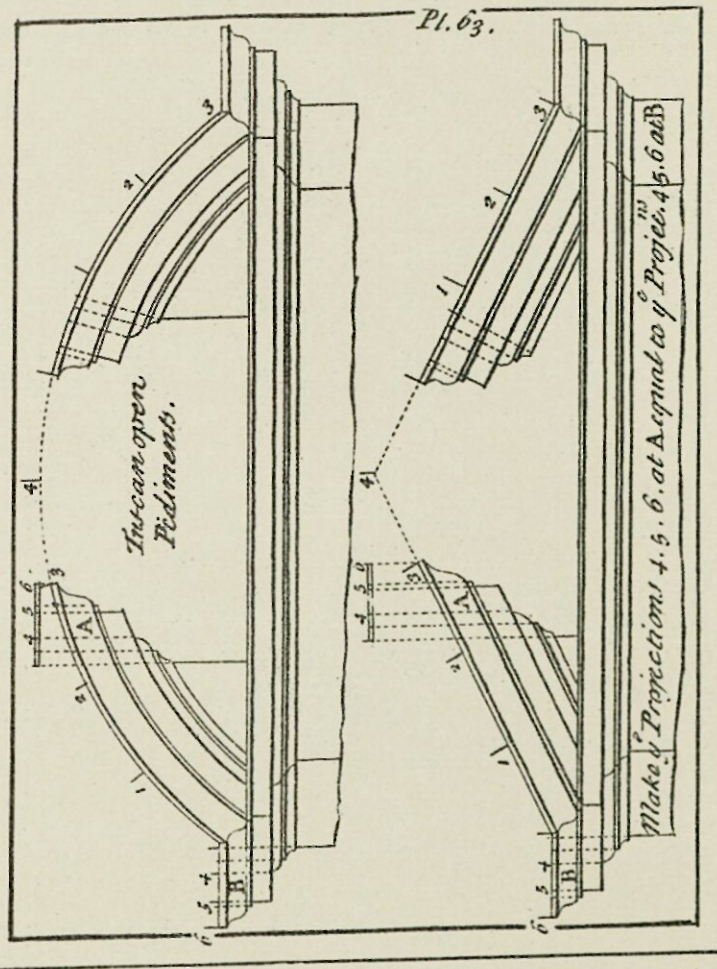
PLATES 56. 57. 58. 59.

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.







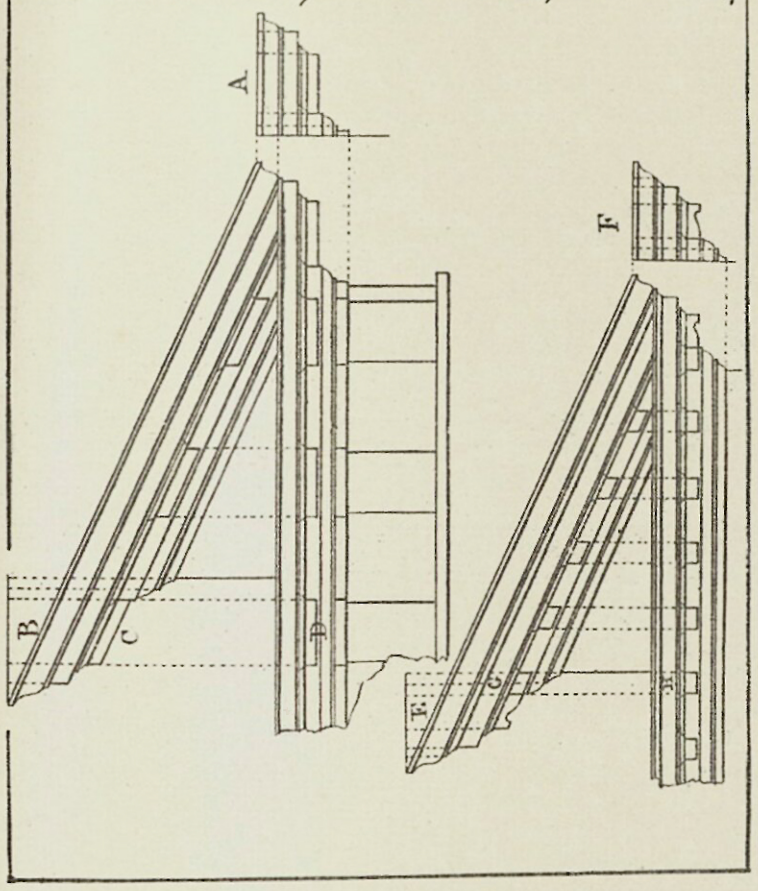


PLATES 60.61.62.63.

FROM BATTY LANGLEY.

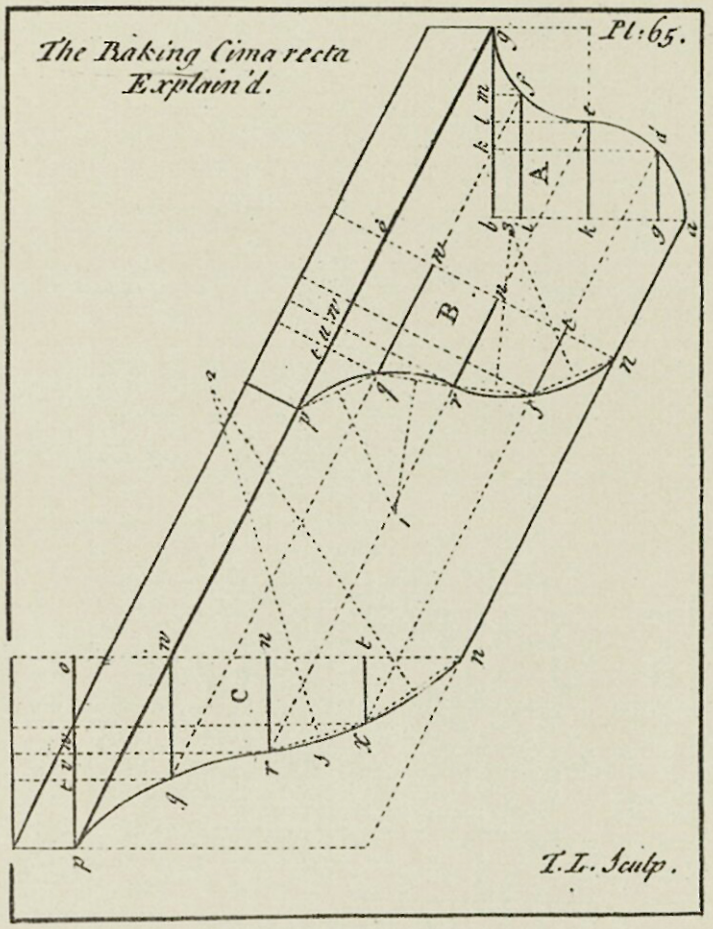
ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.

The Dorick & Ionick open Pediment Explain'd. Pl. 64



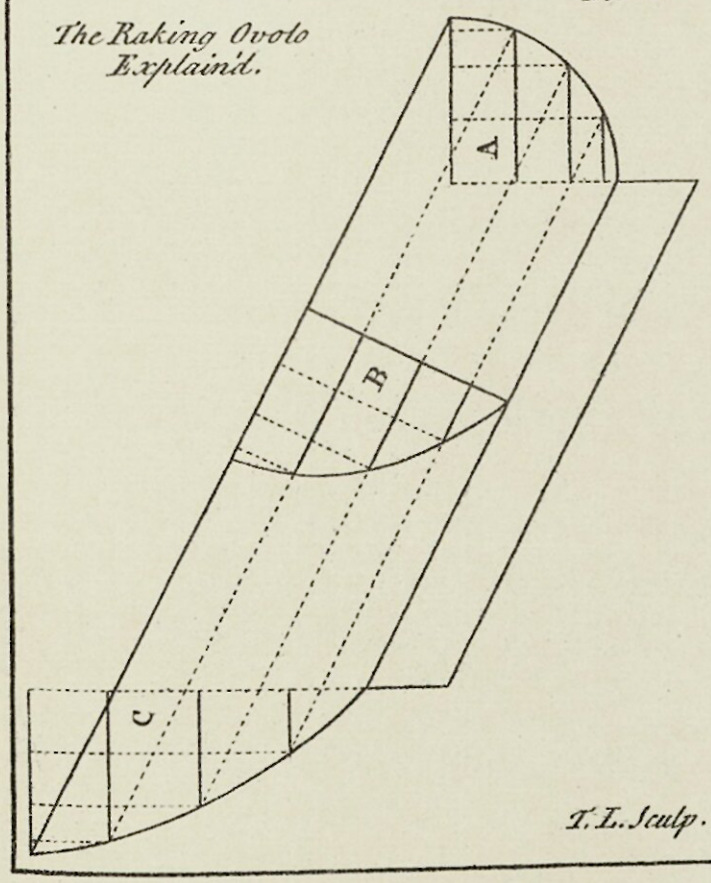
Pl: 65.

The Raking Cima recta Explain'd.



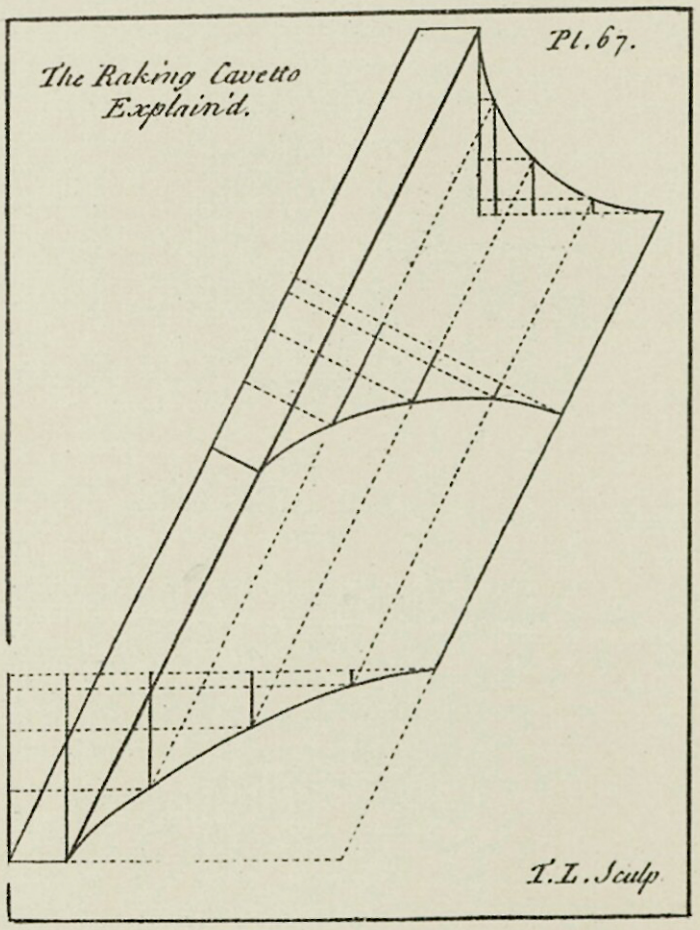
Pl. 66.

The Raking Ovolo Explain'd.



Pl. 67.

The Raking Cavetto Explain'd.

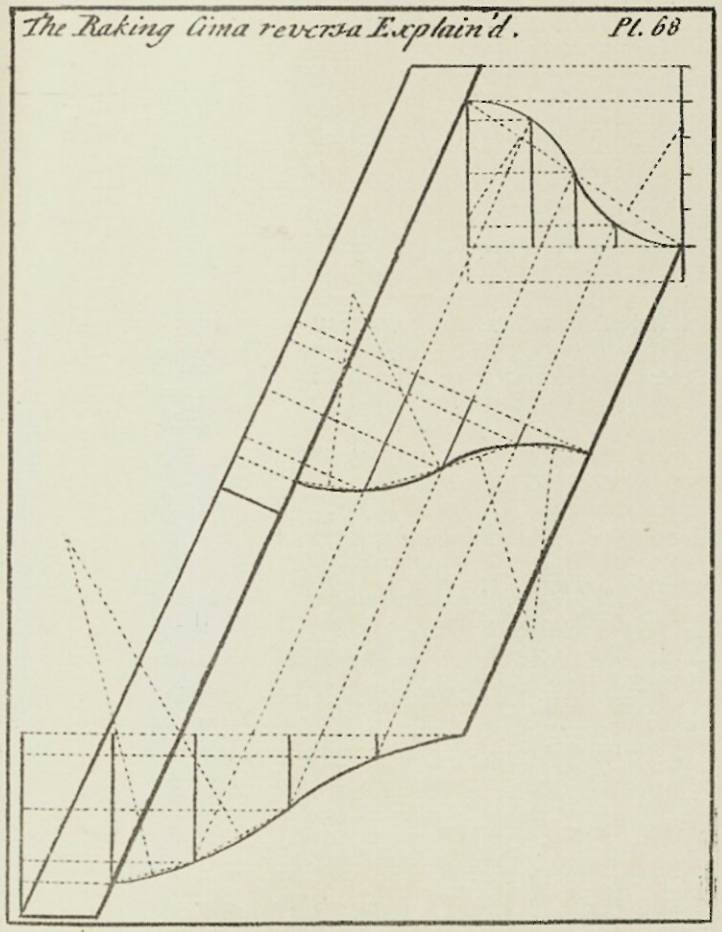


PLATES 64. 65. 66. 67.

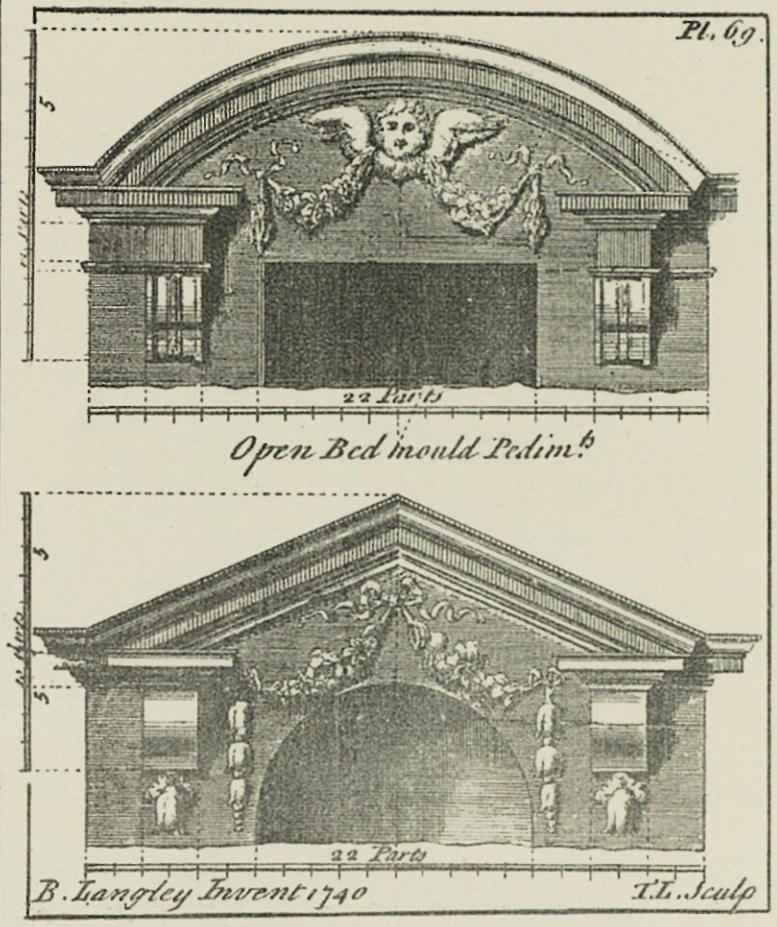
FROM BATTY LANGLEY.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.

The Raking Cima reversa Explain'd. Pl. 68



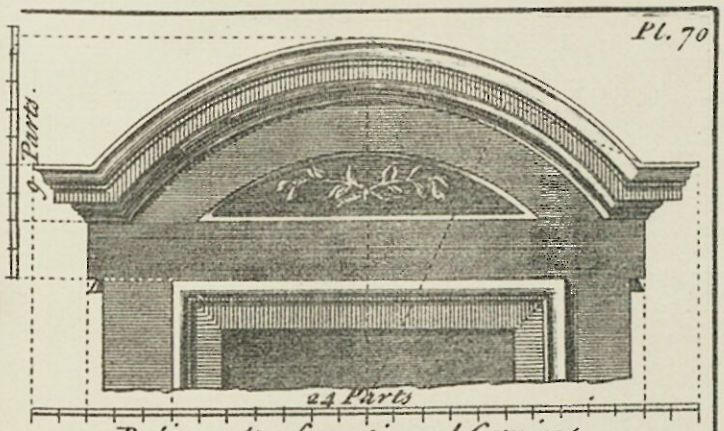
Pl. 69.



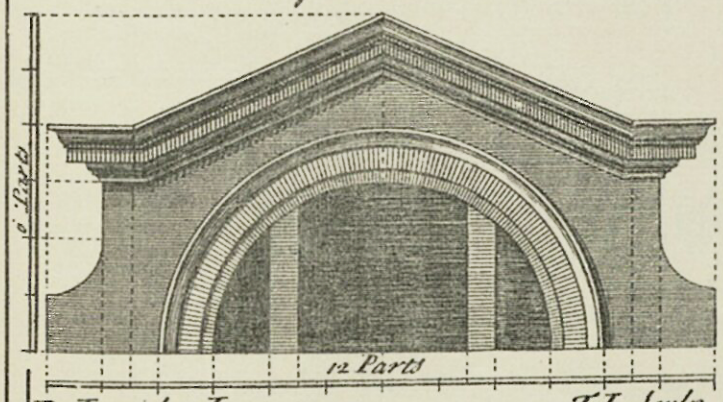
Open Bed mould Pedim.t

B. Langley Invent 1740 T.L. Sculp

Pl. 70

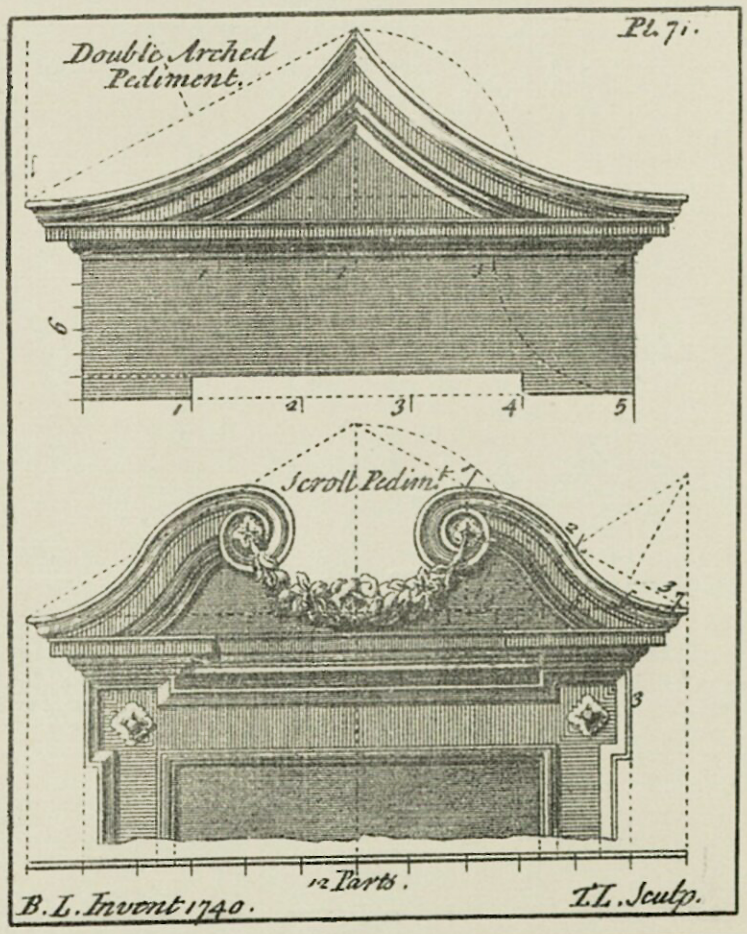


Pediments of continued Cornices.



B. Langley Invent 1740 T.L. Sculp.

Pl. 71.



B. L. Invent 1740. T.L. Sculp.

FROM BATTY LANGLEY.

PLATES 68. 69. 70. and 71

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.

Ogee Scheme Pediment. Pl. 72.

20 Parts

Triple Curved Pediment

20 Parts

B. Langley Invent. 1740. T. L. Sculp.

Contracted Pediments. Pl. 73.

T. L. Sculp.

Contracted Scroll Pediments. Pl. 74.

B. Langley Invent. 1741. T. L. Sculp.

Block Cornices. Pl. 75

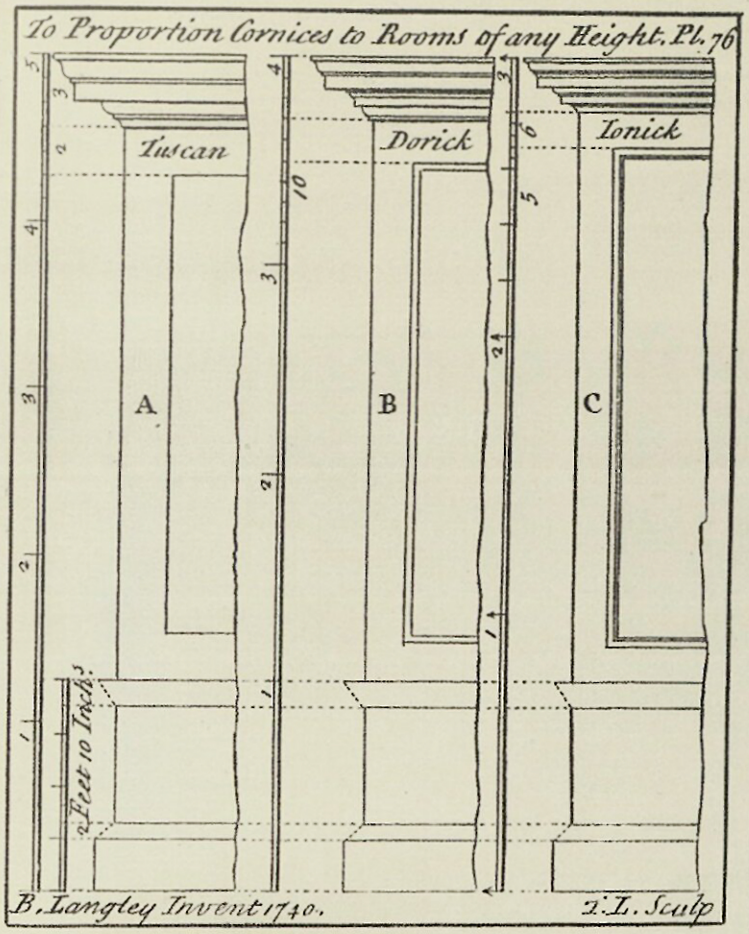
8 parts

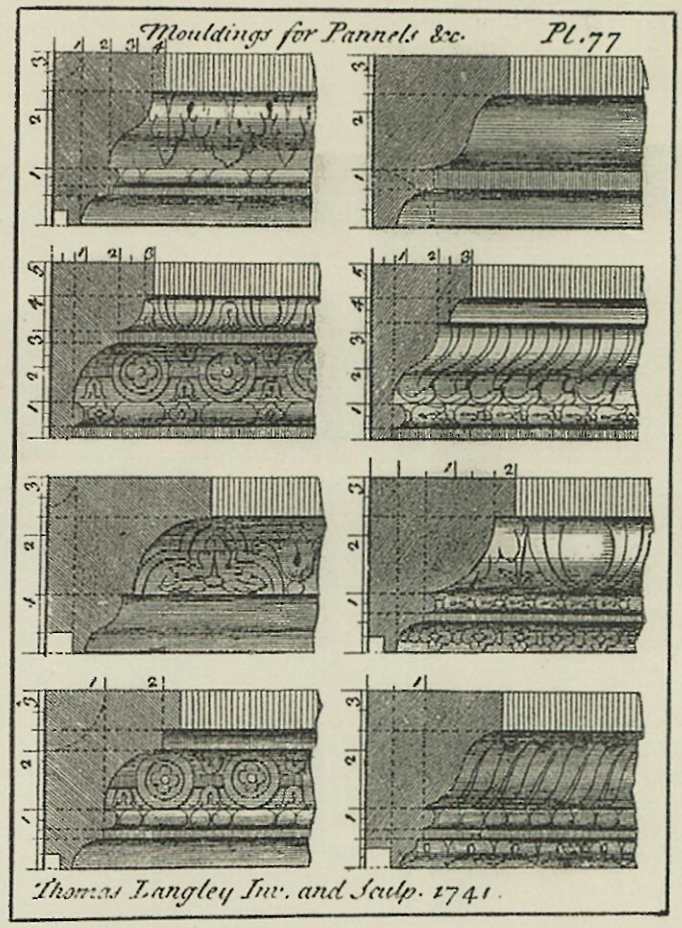
B. L. Invt.
T. L. Sculp.

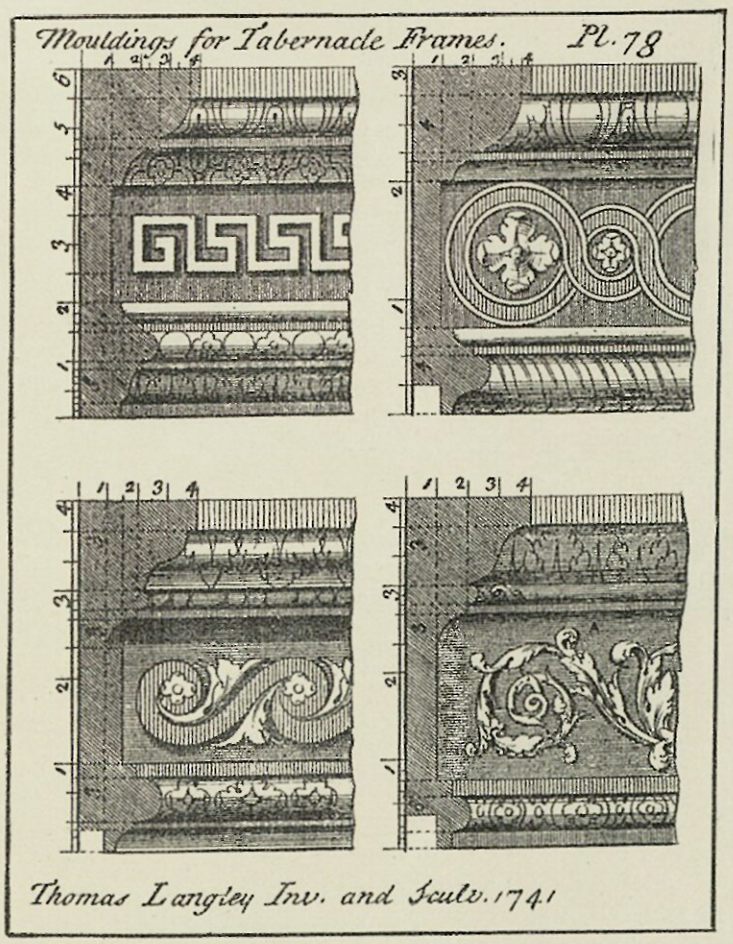
FROM BATTY LANGLEY.

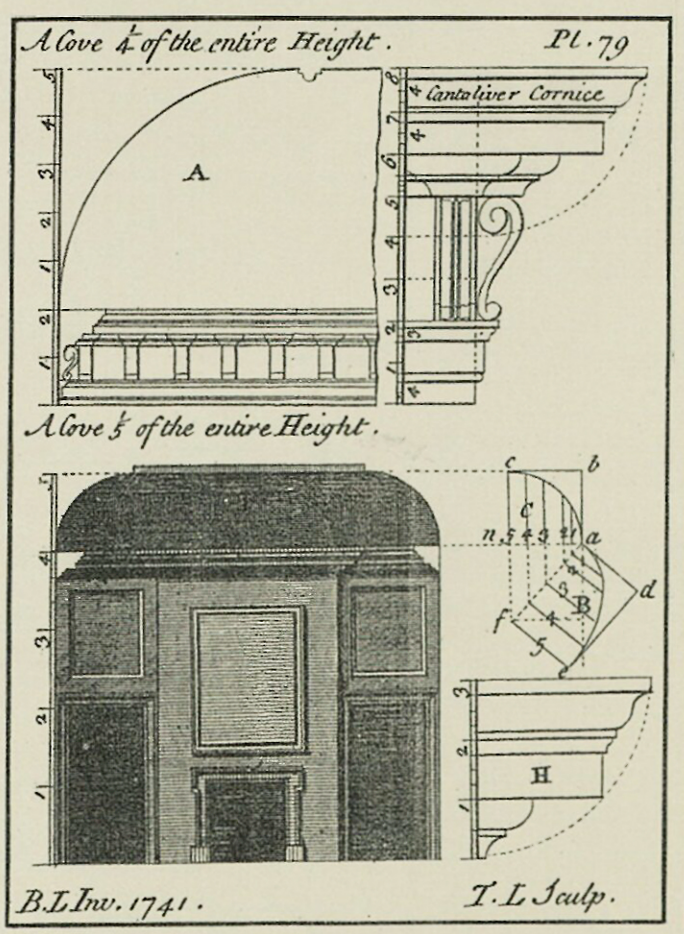
PLATES 72 73 74 and 75

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.







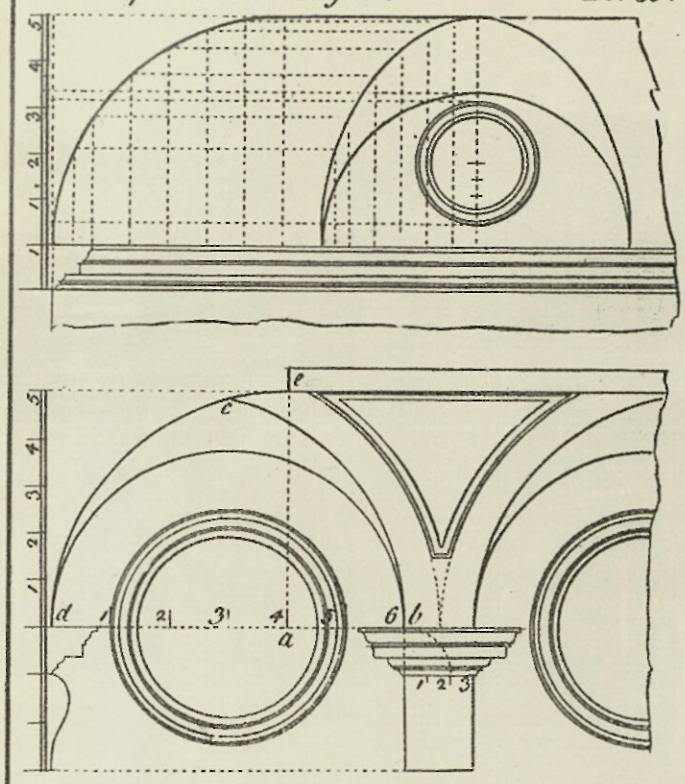


FROM BATTY LANGLEY.

PLATE 76. 77. 78. and 79.

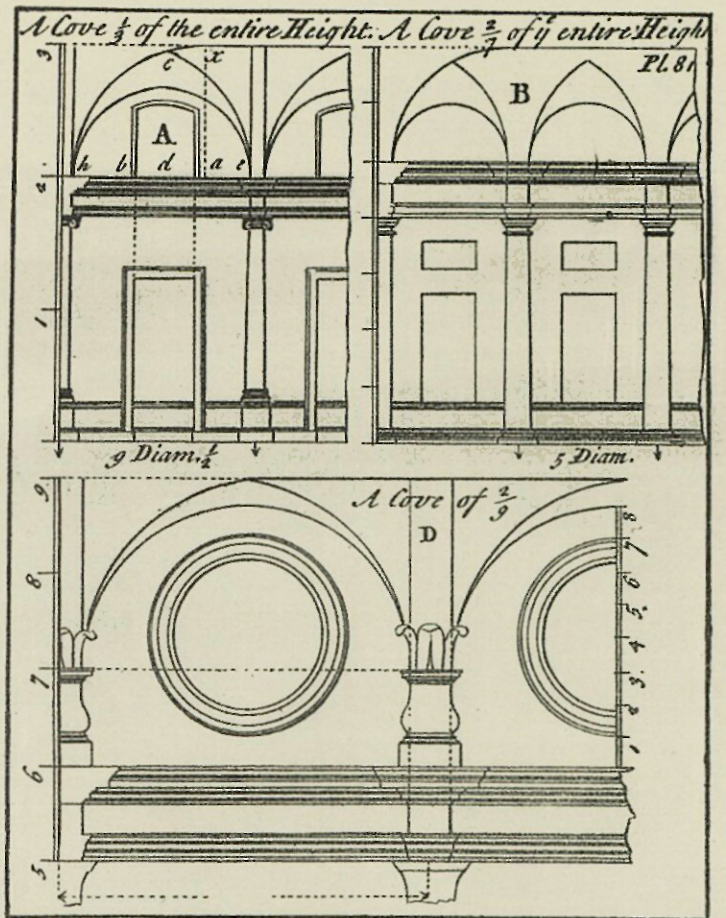
ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.

Coves 6 of the entire Height. Pl. 80.



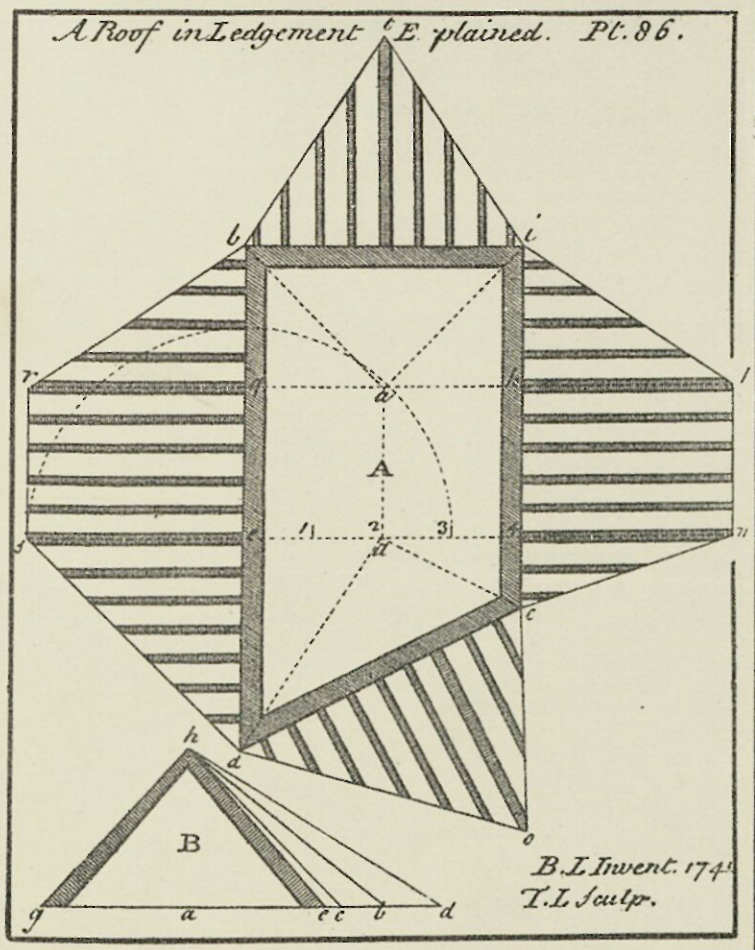
B.L.Inv.1741. T.L.Sculp.

A Cove ½ of the entire Height. A Cove ⅔ of ij entire Height. Pl. 81.



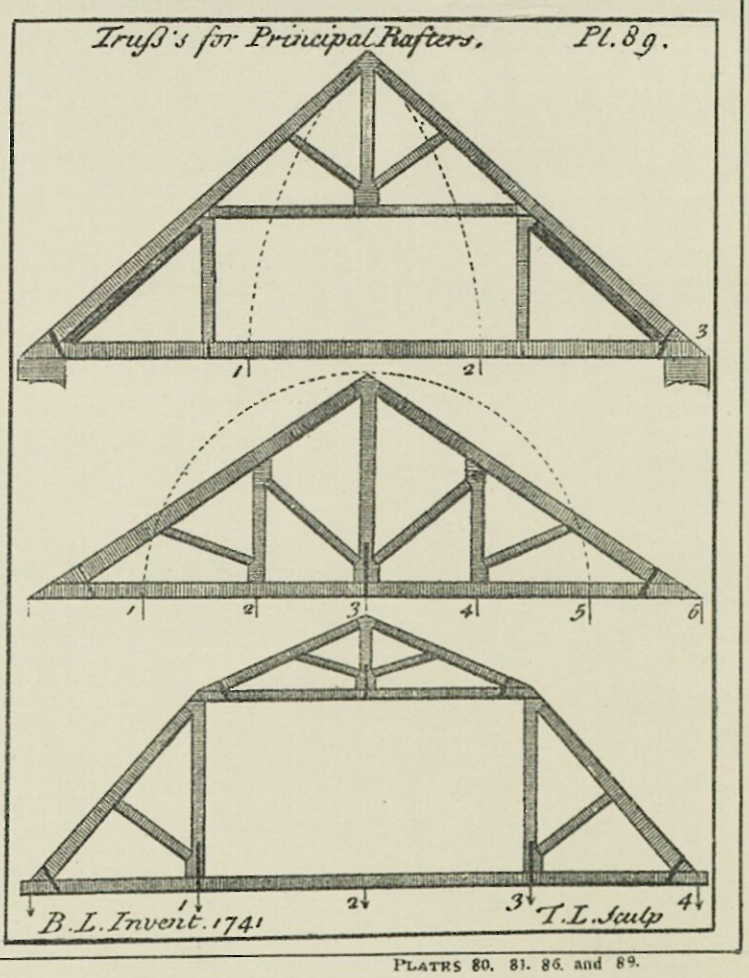
B.L.Langley Invent 1741.

A Roof in Ledgement E. plained. Pl. 86.



B.L.Invent. 1741
T.L.Sculp.

Truss's for Principal Rafters. Pl. 89.



B.L.Invent. 1741 T.L.Sculp

FROM BATTY LANGLEY.

PLATES 80. 81. 86. and 89.

ANDREW B. GRAHAM CO., LITHOGRAPHERS, WASHINGTON, D. C.

J. HULZER
CYNDER
BOSTON, MASS.